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13 AUG 1965

The Honorable Cyrus R. Vance
Deputy Secretary of Defense
Washington, D. C.

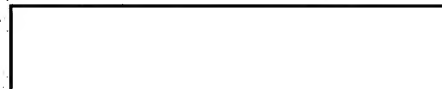
Dear Cy:

I have signed and am returning a proposed NRO agreement which conforms in almost all respects to the draft which you discussed with John Bross on 6 August. I have made some very minor editorial changes in the interest of uniformity. For example, the word "will" is used throughout as a replacement for the word "shall" which appeared in portions of the earlier versions of the document.

The only change of any substance is the proposal to limit the membership of the Executive Committee to the Deputy Secretary of Defense, the Director of Central Intelligence and the Special Assistant to the President for Science and Technology. This seems to fit the national character of this organization and is in agreement with what I believe are your views on its non-alignment to any Agency or Service. Accordingly, I propose the reintroduction of the language of an earlier draft which provides that the Executive Committee is established to "guide and participate in the formulation of the NRF through the DNRO. The DNRO will sit with the Executive Committee but will not be a voting member." If you feel strongly that the DNRO should be an actual member of the Committee, I should be glad to give it further consideration.

The only other change which I should like to propose and have tentatively included in the new agreement is a new sentence

NRO review(s) completed.



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to go at the end of paragraph D.1.d. With the addition of this sentence, the concluding portion of this paragraph would read as follows (new sentence underlined):

The engineering development of all other subsystems, including spacecraft, reentry vehicles, boosters and booster interface subsystems shall in general be assigned to an Air Force component, recognizing, however, that sensors, spacecraft and reentry vehicles are integral components of a system, the development of which must proceed on a fully coordinated basis, with a view to ensuring optimum system development in support of intelligence requirements for overhead reconnaissance. To optimize the primary objective of systems development, design requirement of the sensors will be given priority in their integration within the spacecraft and reentry vehicles.

I believe that specific guidance along these lines will be extremely helpful for the purpose of ensuring smooth working relationships in the development and integration of the over-all payload.

If this agreement meets with your approval, I suggest that we meet at an early date to discuss any questions relating to its implementation. John Bross advises me that you agree that we should give early attention to the problem of whether or not to go ahead with

_____ We also should meet promptly to decide on a plan for the orderly administration of the various contracts relating to the new general search system in the light of the recommendations of the Land Panel report.

I firmly believe that this agreement will set the stage for harmonious and effective collaboration for the future in the National Renaissance Program. The importance of this program

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to the national security cannot be exaggerated and you have my assurance that I will take appropriate action to see that all personnel under my control who are concerned with this program in the future will give it their full and unqualified support. I am confident that if a fully cooperative attitude can be developed and maintained on the part of all components and individuals associated with the program, it will have the successes which its importance deserves.

Sincerely,

((signed)), W. F. Raborn

W. F. Raborn
Director

Attachment

JABROSS:ag (11/8/65)

Distribution:

- 1 & 2 - Addressee
- 3 - DCI
- 4 - DDCI -
- 5 - ExDir-Comptroller
- 6 - DD/S&T
- 7 - NIPE
- 8 - NIPE

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AGREEMENT FOR REORGANIZATION OF THE
NATIONAL RECONNAISSANCE PROGRAM

A. The National Reconnaissance Program

1. The NRP is a single program, national in character, to meet the intelligence needs of the Government under a strong national leadership, for the development, management, control and operation of all projects, both current and long range for the collection of intelligence and of mapping and geodetic information obtained through overflights (excluding peripheral reconnaissance operations). The potentialities of U.S. technology and all operational resources and facilities must be aggressively and imaginatively exploited to develop and operate systems for the collection of intelligence which are fully responsive to the Government's intelligence needs and objectives.

2. The National Reconnaissance Program shall be responsive directly and solely to the intelligence collection requirements and priorities established by the United States Intelligence Board.

Targeting requirements and priorities and desired frequency of coverage of both satellite and manned aircraft missions over denied

*Responsive
USIB*

*Targeting Requirements
Provides
Coverage Frequency*

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areas shall continue to be the responsibility of USIB, subject to the operational approval of the 303 Committee.

B. The Secretary of Defense will:

1. Establish the NRO as a separate agency of the DoD and will have the ultimate responsibility for the management and operation of the NRO and the NRP;

2. Choose a Director of the NRO who will report to him and be responsive to his instructions;

3. Concur in the choice of the Deputy Director of the NRO who will report to the DNRO and be responsive to his instructions;

4. Review and have the final power to approve the NRP budget;

*Budget
Review & approval*

5. Sit with members of the Executive Committee, when necessary, to reach decisions on issues on which committee agreement could not be reached.

C. The Director of Central Intelligence will:

1. Establish the collection priorities and requirements for the targeting of NRP operations and the establishment of their frequency of coverage;

*DC /
Priority
Log T
For*

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2. Review the results obtained by the NRP and recommend, if appropriate, steps for improving such results;

3. Sit as a member of the Executive Committee;

4. Review and approve the NRP budget each year;

5. Provide security policy guidance to maintain a uniform system in the whole NRP area.

*Review NRP Program
Review & approve NRP
budget (2nd)
- Security Policy*

D. National Reconnaissance Program Executive Committee

1. An NRP Executive Committee, consisting of the Deputy Secretary of Defense, the Director of Central Intelligence, and the Special Assistant to the President for Science and Technology, is hereby established to guide and participate in the formulation of the NRP through the DNRO. (The DNRO will sit with the Executive Committee but will not be a voting member.) If the Executive Committee can not agree on an issue the Secretary of Defense will be requested to sit with the Committee in discussing this issue and will arrive at a decision. The NRP Executive Committee will:

a. Recommend to the Secretary of Defense an appropriate level of effort for the NRP in response to reconnaissance requirements provided by USCIB and in the light of technical capabilities and fiscal limitations.

Level of effort

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b. Approve or modify the consolidated National Reconnaissance Program and its budget.

c. Approve the allocation of responsibility and the corresponding funds for research and exploratory development for new systems. Funds shall be adequate to ensure that a vigorous research and exploratory development effort is achieved and maintained by the Department of Defense and CIA to design and construct new sensors to meet intelligence requirements aimed at the acquisition of intelligence data.

This effort shall be carried out by both CIA and DoD.

d. Approve the allocation of development responsibilities and the corresponding funds for specific reconnaissance programs with a view to ensuring that the development, testing and production of new systems is accomplished with maximum efficiency by the component of the Government best equipped with facilities, experience and technical competence to undertake the assignment. It will also establish guidelines for collaboration between departments and for mutual support where appropriate. Assignment of responsibility for engineering development of sensor subsystems will be made to either

Who assigns R&E fund? Ep?

Who assigns Dev Resp?

Guidelines on collaboration between depts - etc.

long run

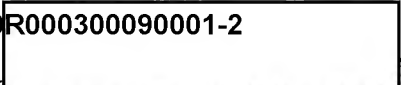
Approve allocation Resp for new sys

CIA - DoD Design & new persons

Approve 1 Dev Resp

Criteria FAC Exp Tech Imp

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the CIA or DoD components in accordance with the above criteria. The engineering development of all other subsystems, including spacecraft, reentry vehicles, boosters and booster interface subsystems shall in general be assigned to an Air Force component, recognizing, however, that sensors, spacecraft and reentry vehicles are integral components of a system, the development of which must proceed on a fully coordinated basis, with a view to ensuring optimum system development in support of intelligence requirements for overhead reconnaissance. To optimize the primary objective of systems development, design requirement of the sensors will be given priority in their integration within the spacecraft and reentry vehicles.

e. Assign operational responsibility for various types of manned overflight missions to CIA or DoD subject to the concurrence of the 303 Committee.

f. Periodically review the essential features of the major program elements of the NRP.

2. The Executive Committee shall meet on the call of either the Deputy Secretary of Defense or the Director of Central Intelligence. All meetings will be attended by the DNRC and such staff advisors as

the Deputy Secretary of Defense or the Director of Central Intelligence

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New
VSAT rev.
S/C
SRV
Boosters
Booster Interface
Sensors
VSAT
DoD

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consider desirable.

E. National Reconnaissance Office

1. To implement the NRP, the Secretary of Defense will establish the NRO as a separate operating agency of the DoD. It shall include the SOC which shall be jointly manned.

2. The Director of the NRO shall be appointed by the Secretary of Defense. The Director NRO will:

a. Subject to direction and control of the Secretary of Defense and the guidance of the Executive Committee as set forth in Section D above, have the responsibility for managing the NRO and executing the NRP.

b. Subject to review by the Executive Committee, and the provisions of Section D above, have authority to initiate, approve, modify, redirect or terminate all research and development programs in the NRP. Ensure, through appropriate recom-

mendations to the Executive Committee for the assignment of research and development responsibilities and the allocation of funds, that the full potentialities of agencies of the Government concerned with reconnaissance are realized for the invention,

NRO
DOD opr Agency
SOC - Jointly Manned

Initiate all R&D programs

Recommend to Ex Com
Assignment of R&D Resp
+ funds

Initiate
Approve
Modify
Redirect
Terminate
all R&D programs in the NRP

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improvement and development of reconnaissance systems to meet USIB requirements.

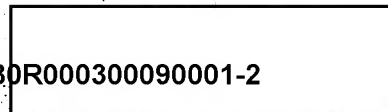
c. Have authority to require that he be kept fully and completely informed by all Agencies and Departments of the Government of all programs and activities undertaken as part of the NRP.

d. Maintain and provide to the members of the Executive Committee records of the status of all projects, programs and activities of the NRP in the research, development, production and/or operational phases.

e. Prepare a comprehensive budget for all aspects of the National Reconnaissance Program.

f. Establish a fiscal control and accounting procedure to ensure that all funds expended in support of the National Reconnaissance Program are fully accounted for and appropriately utilized by the agencies concerned. In particular, the budget shall show separately those funds to be applied to research and exploratory design development, systems development, procurement, and operational activities. Funds expended or obligated

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under the authority of the Director of Central Intelligence

*CIA funds
also accounted
for -*

under Public Law 110 shall be administered and accounted for by CIA and will be reported to DNRO in accordance with agreed upon procedures.

g. Sit with the USIB for the matters affecting the NRP.

3. The Deputy Director NRO shall be appointed by the DCI with the concurrence of the Deputy Secretary of Defense and shall serve full time in a line position directly under the Director NRO. The Deputy Director shall act for and exercise the powers of the Director, NRO during his absence or disability.

4. The NRO shall be jointly staffed in such a fashion as to reflect the best talent appropriately available from the CIA, the three military departments and other Government agencies. The NRO staff will report to the DNRO and DDNRO and will maintain no allegiance to the originating agency or Department.

F. Initial Allocation of Program Responsibilities

1. Responsibility for existing programs of the NRP shall be allocated as indicated in Annex A attached hereto.

((signed), W. F. Raborn

Deputy Secretary of Defense

Director of Central Intelligence

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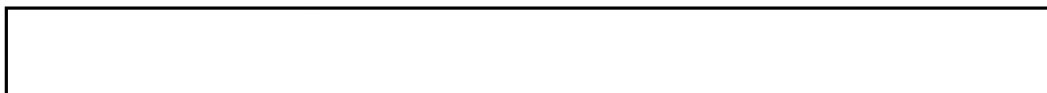


ANNEX A.

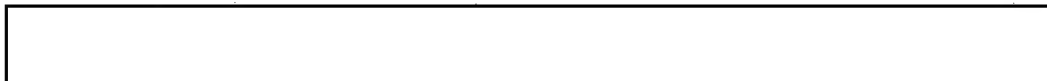
The following assignments for the development of new optical sensor subsystems are made to take full advantage of technical capability and experience of the agencies involved.

1. The CIA will develop the improvements in the CORONA general search optical sensor subsystems.

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NRO



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The Director, NRO will, in managing the corresponding over-all systems developments, ensure that:

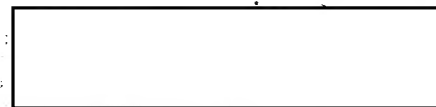
1. The management of and contracting for the sensors is arranged so that the design and engineering capabilities in the various contractors are most efficiently utilized.
2. The sensor packages and other subsystems are integrated in an over-all system engineering design for each system, with DNRO having responsibility for systems integration of each over-all system.

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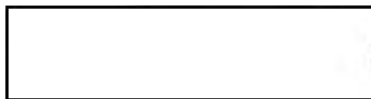
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Resp for existing programs
CORONA
CIP -
Improvements in
Sensor subsystem
No change in current
We assemble, check out etc.
(no) changes re



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F16
New F16 (ad Shome case?)
Mgmt

ACT. DIRECT FOR REORGANIZATION OF THE
NATIONAL RECONNAISSANCE PROGRAM

Draft

I. Preamble

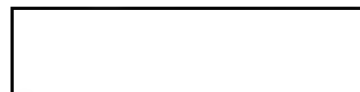
Set forth below are certain basic assumptions which determine the organization appropriate for the administration and direction of the National Reconnaissance Program (NRP).

A. The national character of this essential intelligence enterprise must be maintained through a joint endeavor on the part of DoD and CIA.

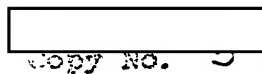
B. The potentialities of U.S. technology must be aggressively and imaginatively exploited to develop systems for the collection of intelligence which are fully responsive to intelligence needs and objectives. In the development of new systems maximum use must be made of the experience, resources, facilities and technical competence of appropriate components of the Defense Department and CIA.

C. Scheduling and targetting of satellite and manned aircraft reconnaissance missions over denied areas should be the responsibility of the DCI and the United States Intelligence Board (USIB).

D. A new organizational framework is required which, particularly in the field of satellite reconnaissance operations and systems development, will: (1) provide a clearly established delineation of the roles and responsibilities of components of the Government engaged in these activities, and (2) ensure effective coordination of these activities under centralized policy guidance and control.



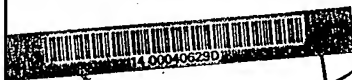
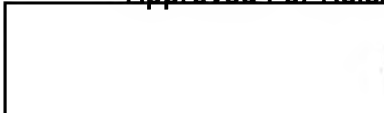
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AGREEMENT FOR REORGANIZATION OF THE
NATIONAL RECONNAISSANCE PROGRAM

Draft

I. Preamble

Set forth below are certain basic assumptions which determine the organization appropriate for the administration and direction of the National Reconnaissance Program (NRP).

A. The national character of this essential intelligence enterprise must be maintained through a joint endeavor on the part of DoD and CIA.

B. The potentialities of U.S. technology must be aggressively and imaginatively exploited to develop systems for the collection of intelligence which are fully responsive to intelligence needs and objectives. In the development of new systems maximum use must be made of the experience, resources, facilities and technical competence of appropriate components of the Defense Department and CIA.

C. Scheduling and targetting of satellite and manned aircraft reconnaissance missions over denied areas should be the responsibility of the ECI and the United States Intelligence Board (USIB).

D. A new organizational framework is required which, particularly in the field of satellite reconnaissance operations and systems development, will: (1) provide a clearly established delineation of the roles and responsibilities of components of the Government engaged in these activities, and (2) ensure effective coordination of these activities under centralized policy guidance and control.



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II. ORGANIZATIONAL FRAMEWORK:

A. Executive Agent for the National Reconnaissance Program -- the Secretary of Defense.

B. THE EXECUTIVE COMMITTEE:

An Executive Committee, consisting of the Deputy Secretary of Defense and the Director of Central Intelligence, will be established to formulate, guide, and regulate the NRP. Specifically the Executive Committee will:

1. Examine the reconnaissance requirements provided by USIB against technical and fiscal capabilities, so as to establish an appropriate level of effort for the NRP. In this role it will rely largely on cost estimates and technical feasibility analyses prepared by the DMR and the component elements of the MR Organization and USIB views expressed with knowledge of cost factors.

2. Approve or modify the consolidated MR program and its budget as forwarded by the DMR.

3. Acting through the DMR, allocate responsibility and the corresponding funds to CIA and/or DOD for research and preliminary design studies for new systems.

4. Allocate development responsibilities and the corresponding funds for specific reconnaissance programs to DOD or CIA, and establish guidelines for mutual support where appropriate. It shall be free to use technical advisory groups as necessary.

5. Assign operational responsibilities to either DOD or CIA for various types of manned over-flight missions, subject to the concurrence, as appropriate, of the SCS Committee.

6. Review periodically the essential features of the major program elements of the NRP.

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C. ROLE OF THE DIRECTOR OF NATIONAL RECONNAISSANCE:

To insure the coordination of CIA and DoD reconnaissance activities a Director of National Reconnaissance will be appointed by the Secretary of Defense with the concurrence of the Director of Central Intelligence. The D/NR will devote his activities exclusively to the NRP and will have no other official duties. He will provide a single point of integration for the planning and budgeting of the National Reconnaissance Program and will be responsible to the Executive Committee for the execution of the program. Specifically he will:

1. Assume such command responsibilities over DoD elements of the NRP as the Secretary of Defense may designate. He will establish suitable lines of coordination with those line components which do not report directly to him. The D/NR will serve for a four year term and will be chosen alternately from CIA and DoD.
2. Be kept fully and completely informed of all reconnaissance activities in CIA and DoD.
3. Schedule the use of the space launching, tracking and recovery facilities.
4. Review budget proposals submitted by appropriate elements of CIA and DoD and prepare and submit a consolidated budget for examination and approval by the Executive Committee.
5. Ensure the flow of funds from the NRP appropriations to CIA and appropriate DoD elements in lump sum transfers each fiscal year. Incremental funding from reserve or reprogramming sources will be used for supplemental programs approved by ExCom.
6. Deal with the operating head of the CIA or his designated alternate on all matters of policy, coordination, or guidance. He will not exercise command control over subordinate elements of CIA or its personnel, however, the DCI will insure that the fullest measure of cooperation is afforded the D/NR.
7. Sit with the USIB for the matters affecting the NRP.

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3. Appear before the SCS Committee to the extent desired by the DCI or the Deputy Secretary of Defense to secure approval for overhead reconnaissance missions.

D. TRAINING OF THE REORGANIZED NATIONAL RECONNAISSANCE PROGRAM:

To insure that the National Reconnaissance Office is truly a national entity, it will be manned in a balanced way by personnel from DOD and CIA. An appropriate plan to rotate DOD and CIA personnel into key positions of the NRP will be developed and approved by the ExCom. (Attached is chart showing key senior positions of NRP)

III. OTHER FEATURES OF THE NRP:

A. RESEARCH AND PRELIMINARY DESIGN:

1. Research on reconnaissance technology and preliminary design of new systems will be encouraged and supported in both CIA and DOD. It will be supported by a lump sum allocation from NRP line items to each group at a level to be established by the Executive Committee. It is intended that these funds and their products represent the flexible cutting edge of the NRP.

2. A prescribed amount of these resources will be allocated for support of basic research on reconnaissance technology to stimulate and assure the future vigor of this field. The DMR will be kept fully informed of all activities and developments in this connection for the purpose of ensuring appropriate coordination and preventing unwitting duplication as well as encouraging joint exploitation of new techniques.

3. Preliminary design and small technical feasibility demonstrations of new reconnaissance systems will also be funded from this innovation resource. Such work can grow out of requirements originating with USIB, the ExCom or the DMR for improvements in existing capabilities, or can result from spontaneous initiative in the CIA and DOD participating elements. However, it is important that the DMR and ExCom receive each month a comprehensive report on the initiation, status, or conclusion of such efforts. In this way, competitive study efforts will be recognized, approved or discouraged, and synchronized for later decision actions.

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B. SYSTEMS DEVELOPMENT:

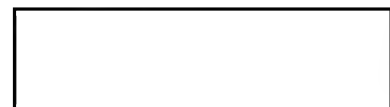
1. When a new reconnaissance system concept has been sufficiently well defined and its technical feasibility established to the satisfaction of the ExCom, it would be included as a part of the NRP. At this point, it should receive necessary funding from line items in the budget identified with these systems. These funds would then be allocated to CIA and/or DoD, as recommended by D/NR, to whom specific developmental responsibility has been assigned by the ExCom. D/NR would be responsible for recommending the allocation of funds to either CIA or DoD subject to approval of ExCom for specific developmental responsibilities.

2. The element of CIA and/or DoD assigned development responsibility for a new system will be responsible for selecting and supervising capable contractors; for establishing such systems engineering support as they deem necessary; for rendering periodic reports on program progress to the D/NR and ExCom and generally for the success of the program.

3. Satellite reconnaissance systems are characterized primarily by the payload (cameras, spacecraft, data recovery system) as well as by their boosters. The interface between the launch system and the payload is of critical importance and planning for compatible checkout and launch facilities, boosters, tracking and recovery must proceed with the payload development. The D/NR will be responsible for the success of this interface.

C. SATELLITE OPERATIONAL PHASE:

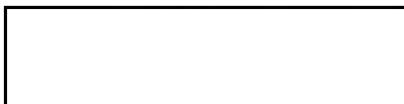
1. When the satellite payload has been successfully developed, it becomes a part of the operational assets of the NRP. The payloads, together with appropriate boosters, launchers and tracking stations, represent the NRP capability to obtain orbital photography and other intelligence information, and accordingly represent part of an orderly program to acquire intelligence in response to USIB requirements, target lists and priorities. The D/NR must play the central role in planning this program. It



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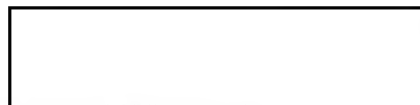
involves far-sighted budgeting for payload production as well as booster procurement and modification. It involves judicious scheduling of operational launches from fixed resources, in addition to development flight tests. It requires a plan with sufficient flexibility to respond to changing world situations and the corresponding intelligence needs. It is a complex managerial task for which a single individual must in the last analysis be responsible.

2. The Satellite Requirements Program Center, formerly known as "Satellite Operations Center," shall be responsive to USIB requirements. The Center is recognized as an intelligence function and shall be the responsibility of CIA under coordination of the D/RR.

D. MANNED OVERFLIGHT OPERATION

1. Covert manned overflights of denied areas will be the responsibility of the Central Intelligence Agency. These missions will be planned in the Air Operations Center of CIA in response to USIB target coverage requirements with the approval of the 303 Committee. The D/RR will be kept fully informed of such planning and operations. Within the constraints established by the 303 group, these missions will be executed by CIA in the light of target and terminal weather, negotiations for overcross base use and defensive tactics necessary for operational survival. Electromagnetic countermeasures equipment developed by the DoD will not be used in such operations without the explicit approval of the JCS and DoD to prevent unwitting compromise of sensitive war planning. Special purpose equipment developed by CIA for this operation will not be so restricted. The DoD will continue to support such operations with airlifts, tankers, and base equipment in accordance with the basic U-2 and OXCART agreements.

2. Overt manned overflights of denied territory or overt missions covering friendly territory will be the responsibility of the DoD. The Joint Reconnaissance Center of the JCS will plan the missions in response to USIB and/or field command target requirements. JRC will be responsible for



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executing such missions with the approval of the SSS Committee. The JNC will keep the D/IR fully informed on all such mission planning and execution. The CIA will support JNC in negotiations on overseas bases, providing secure communications, and security support as requested. DOD use of defensive equipment, cameras, and other sensor systems developed by CIA will be coordinated with CIA to prevent unwitting compromise of sensitive intelligence collection methods and techniques.

8. The designation of particular classes of manned overflight operations as overt or covert will be the responsibility of the ExCom in consultation with the SSS Committee, as noted above.

E. SECURITY:

The Director of Central Intelligence, in accordance with his statutory responsibilities for protection of intelligence sources and methods, shall be responsible for the over-all security policy of the NRP. The D/IR will be responsible for the coordination of security matters within the respective elements of the NRP in accordance with the guidelines set forth by the Executive Committee. Release of public information shall be coordinated with CIA. The CIA shall maintain a central record of all security clearances related to the NRP.

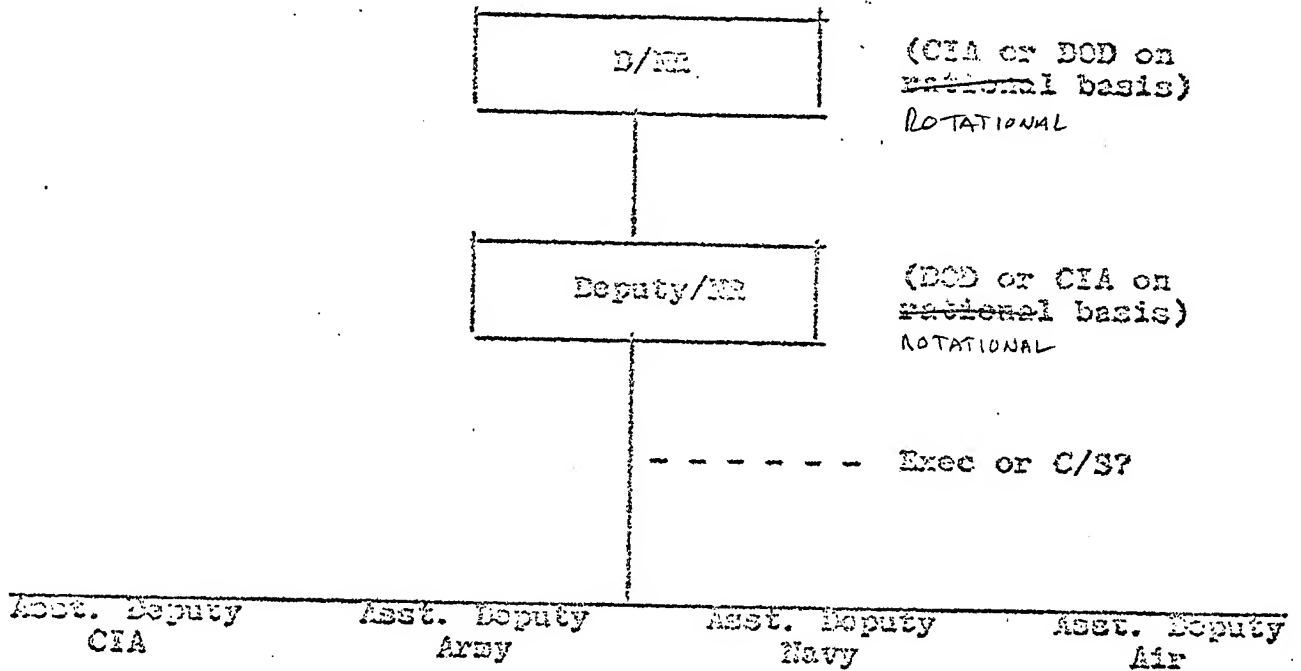
F. BUDGETING:

A separate National Reconnaissance Program funding agreement will be entered into and made a part of this agreement.

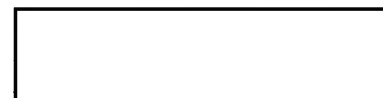
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ATTACHMENT

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The Assistant Deputies would constitute the action and information channels to their respective parent services.



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CORONA

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FROM GENERAL CARTER TO [REDACTED] AND MR. CROWLEY

[REDACTED] PLEASE PASS SECRETARY VANCE AND DR. MCMILLAN

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[REDACTED] PLEASE PASS TO GENERAL GREER

THE INSTRUCTIONS CONTAINED IN [REDACTED] REMAIN IN EFFECT.

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IF DR. MCMILLAN VISITS STC DURING MISSION 1018, REQUEST YOU BE PREPARED TO BRIEF HIM FULLY ON APPROPRIATE PROCEDURES AND ACTIVITIES RELATIVE TO CIA'S PARTICIPATION AND RESPONSIBILITIES IN CORONA MISSIONS. YOU SHOULD NOT, HOWEVER, CHANGE ANY CURRENT PROCEDURES. SINCE CIA CONTINUES TO CARRY DIAGNOSTIC RESPONSIBILITY FOR PAYLOAD STATUS AND PERFORMANCE, THERE IS NO REQUIREMENT TO PASS TELEMETRY READINGS, CALIBRATIONS, AND SO FORTH TO OTHERS. IN OTHER WORDS, CONFORM FULLY AND WITH HIGHEST COOPERATION WITH CURRENT SOP'S. YOU SHOULD AS ALWAYS KEEP DIRECTOR, PROGRAM A, OR HIS APPROPRIATE REPRESENTATIVES, INFORMED

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OF RESULTS OF YOUR PAYLOAD STATUS ANALYSIS, AND ESPECIALLY IN
DETAIL ANY CONDITION CONCERNING THE OPERATION OF THE PAYLOAD
WHICH IN ANY WAY MIGHT HAVE AN ADVERSE EFFECT ON THE HEALTH OF
THE VEHICLE OR BEAR ON THE DECISION TO DE-ORBIT.

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AS ON PREVIOUS CORONA FLIGHTS, IT IS DESIRED THAT AN
AUTHORITATIVE REPRESENTATIVE OF CIA BE PRESENT AT THE
SATELLITE TEST CENTER DURING ALL CRITICAL PHASES OF THE
ORBITAL OPERATION OF CORONA 1018. AS USUAL, THIS REPRESENTATIVE
WILL BE PREPARED TO DISCUSS WITH THE DIRECTOR, PROGRAM A,
OR DIRECTOR [REDACTED] INFORMATION ON THE CONDITION AND
OPERATION OF THE PAYLOAD AND THE PAYLOAD SECTION OF THE
VEHICLE WHICH COULD IN ANY WAY AFFECT THE HEALTH OF THE
VEHICLE OR BEAR ON THE DECISION OF DE-ORBIT. THIS DOES NOT
RELIEVE YOU OF YOUR RESPONSIBILITY FOR ENSURING THE INTEGRITY
OF THE CORONA PAYLOAD.

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END OF MESSAGE

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APPENDIX A

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APPENDIX A - DOCUMENTATION*
(In Chronological Order)

Tab No.

1. Project CORONA Outline, 15 April 1958, COR-0013, TS, with covering Memorandum for General Andrew J. Goodpaster from Richard M. Bissell, Jr., Special Assistant to the Director, COR-0014, ☐ 25X1
2. Allen W. Dulles, DCI, Memorandum for CIA Comptroller, 25 April 1958, sub: Project CORONA, DPS-0025, ☐ 25X1
3. Work Statement, Development of a Satellite Reconnaissance and Recovery System (CORONA) by Lockheed Missile Systems Division, 25 April 1958, COR-0016.
4. CORONA Cover Story, 23 June 1958, COR-055, ☐ 25X1
5. Richard M. Bissell, Jr., Special Assistant to the Director, Memorandum for Director, Advanced Research Projects Agency, sub: Financing of Project CORONA, 25 June 1958, COR-0057, ☐ 25X1
6. Revised Project CORONA Outline, 8 August 1958, COR-0064, ☐ with covering Memorandum for General Andrew J. Goodpaster from Richard M. Bissell, Jr., Special Assistant to the Director, COR-0065, ☐ 25X1
7. Richard M. Bissell, Jr., Special Assistant to the Director, Memorandum for Major General Jacob E. Smart, Assistant Vice Chief of Staff, USAF, 25 November 1958, sub: Distribution of Responsibilities for CORONA, COR-0239, ☐ 25X1
8. Richard M. Bissell, Jr., Special Assistant to the Director, Memorandum for the Record, 28 November 1958, sub: Additional Release from the Reserve for CORONA, COR-0212, ☐ 25X1
9. Allen W. Dulles, DCI, Memorandum for Deputy Secretary of Defense and Special Assistant to the President for S&T, 4 December 1958, sub: Proposed Curtailment of Project CORONA, COR-0214, ☐ 25X1

*These documents are true copies of the originals in DD/S&T files.

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Tab No.

10. CORONA Cover Plan, 8 December 1958, COR-0160, [] 25X1
11. Proposed Statement for the Press on DISCOVERER Series, 8 December 1958, [] 25X1
12. Revised Project CORONA Outline, 11 March 1959, COR-0372, [] with covering Memorandum for Brigadier General A. J. Goodpaster from Richard M. Bissell, Jr., Deputy Director (Plans), 11 March 1959, COR-0379, [] 25X1
13. Richard M. Bissell, Jr., Deputy Director (Plans), Memorandum for Deputy Secretary of Defense, 29 April 1959, sub: Approval of Extension of Project CORONA, COR-0436, [] with attachment, COR-0266/A, [] dated 5 May 1959. 25X1
14. Richard M. Bissell, Jr., Deputy Director (Plans), Memorandum for Brigadier General Andrew J. Goodpaster, 7 July 1959, sub: Proposed Supplement to CORONA Project, COR-0542, TS, with attachment, COR-0541, [] 25X1
15. Department of Defense Directive No. S-5200.13, November 15, 1962, sub: Security Policy for Military Space Programs (U), [] 25X1
16. National Security Council 502nd Meeting, 10 July 1962, Excerpt from Record of Actions, [] 25X1
17. Eugene P. Kiefer, Deputy Director, National Reconnaissance Office, Memorandum for Deputy Director of Central Intelligence, 9 July 1963, sub: Technical Management of CORONA Program, [] 25X1A
18. Albert D. Wheelon, Deputy Director for Science and Technology, Memorandum for Deputy Director of Central Intelligence, 23 June 1964, sub: [] 25X1A
19. Albert D. Wheelon, Deputy Director for Science and Technology, Memorandum for Director of Central Intelligence, 31 August 1964, sub: Conduct of [] 25X1A

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Tab No.

20. Albert D. Wheelon, Deputy Director for Science and Technology, Memorandum for Deputy Director of Central Intelligence, 18 September 1964, sub: Terms of Reference for [REDACTED] 25X1A
[REDACTED]
21. Albert D. Wheelon, Deputy Director for Science and Technology, Memorandum for Deputy Director, Central Intelligence, 29 January 1965, sub: History of the CORONA System (drafted by [REDACTED] O/DD/S&T), [REDACTED] 25X1A
CORONA.
22. Albert D. Wheelon, Deputy Director for Science and Technology, Memorandum for Deputy Director of Central Intelligence, 26 February 1965, sub: Establishment of a Satellite Office Within the Science and Technology Directorate, [REDACTED] 25X1A
23. "A Summary of the National Reconnaissance Program," Drafted by Albert D. Wheelon, Deputy Director for Science and Technology, 13 May 1965, [REDACTED] 25X1A
24. Jackson D. Maxey, Chief, Special Projects Staff, Memorandum for Deputy Director for Science and Technology, 27 July 1965, sub: [REDACTED] Program History through July 1965, [REDACTED] 25X1A
25. W. F. Raborn, Director of Central Intelligence, Letter to The Honorable Cyrus R. Vance, Deputy Secretary of Defense, 13 August 1965, sub: NRO Agreement, [REDACTED] with attachment 25X1A
Signed NRO Agreement, 13 August 1965, [REDACTED] 25X1A
[REDACTED]
26. L. K. White, Executive Director/Comptroller, Memorandum for Deputy Director for Science and Technology, 15 September 1965, sub: Establishment of an Office of Special Projects, ER-65-5310, S, with attachment, Albert D. Wheelon, 25X1A

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Tab No.

Deputy Director for Science and Technology, Memorandum for Deputy Director of Central Intelligence, 9 September 1965, sub: Request for Approval of a Staffing Complement for the Office of Special Projects, DD/S&T, [] 25X1A

27. John J. Crowley, Director, Office of Special Projects, and Jack C. Ledford, Brigadier General, USAF, Director of Special Activities, Memorandum for Deputy Director for Science and Technology, 1 October 1964, sub: Joint Recommendation Concerning Management Relations Between the Office of Special Activities, and the Office of Special Projects, [] 25X1A

28. Memorandum for Deputy Director of Central Intelligence, 9 May 1966, sub: Management of the [] Development Program. Drafted by the [] Project Office, [] 25X1A

29. Alexander H. Flax, Director, National Reconnaissance Office, Memorandum for Director of Reconnaissance, CIA, Director of Special Projects, SAF, June 22, 1966, sub: CORONA Management Plan and Organizational Responsibilities, [] 25X1A

30. Albert D. Wheelon, Deputy Director for Science and Technology, Memorandum for the Director of Central Intelligence, 29 August 1966, sub: Inter-Directorate Responsibilities Regarding [] 25X1A

31. Memorandum of Understanding Between the Central Intelligence Agency and the Advanced Research Projects Agency with Respect to Project [] 25X1A
[] 25X1A

32. Carl E. Duckett, Acting Deputy Director for Science and Technology, Memorandum for Director of Central Intelligence, 7 October 1966, sub: [] 25X1A
[] 25X1A

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16 April 1958

MEMORANDUM FOR: General Andrew J. Goodpaster

Attached hereto is an outline of Project CORONA. This paper is the result of discussions with Mr. Roy Johnson and Admiral John Clark of ARPA; Mr. Richard Horner, Assistant Secretary of the Air Force for Research and Development; and General Osmand Ritland, Vice Commander, Air Force Ballistic Missile Division. It has been seen by Dr. James Killian.

The course of action proposed herein is satisfactory to these individuals and to their organizations, and is recommended by the Director of Central Intelligence.

(Signed)

RICHARD M. BISSELL, JR.
Special Assistant to the Director

Att:
Cy 1, COR-0013

COR-0014

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15 April 1958

PROJECT CORONA

1. Purpose: Project CORONA contemplates the covert development and subsequent operational use of a short-lived reconnaissance satellite from which, at the completion of its mission, a recoverable capsule containing exposed film is separated for return and pick up in a preselected ocean area. Prior to the initiation of this project, the development of such a system had been started by the Air Force as a part of Weapons System 117L but was officially cancelled early in March. Thus, CORONA involves the picking up and carrying through covertly of a program already undertaken together with technical modifications therein as indicated below.

2. Configuration: Taking advantage of arrangements already made by the Air Force, the basic vehicle for project CORONA will be a two-stage rocket consisting of the same second stage that is being built by Lockheed for WS-117L with a Thor booster as the first stage (in place of the Atlas booster which will be the first stage of the WS-117L vehicle). The payload will be a pod containing a twenty-four inch focal length camera and a recoverable capsule into which the exposed film feeds as the camera operates. Either the whole second stage of the vehicle, or possibly only the pod containing the payload, will be stabilized after it is in orbit and will serve as a platform from which the camera continuously looks downward to the earth and takes pictures by scanning at right angles to the path. This configuration is expected to yield a resolution of about twenty feet on the ground which should be sufficient to permit structures to be distinguished from one another and to allow the detection and identification of such major reconnaissance targets as missile sites under construction, previously unobserved communities, or other major installations in the areas hitherto inaccessible to reconnaissance such as the Soviet far north.

3. Program: It is proposed that twelve vehicles in the above configuration be produced. Although it has not yet been possible to establish a firm schedule of delivery

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dates, it appears probable that the first firing can be no later than June of 1959. It is tentatively planned to schedule firings initially at the rate of one a month but to achieve a faster rate, perhaps as high as two per month, as soon as possible. Assuming that this timing can be achieved, the twelve firings should be completed in the spring of 1960. It must be assumed that by no means all of these vehicles will be successfully orbited, operate without malfunction, and be recovered. At a later date it may be desirable to consider whether this program should be extended, with or without further technological improvement.

4. Modification of Earlier Plans: The configuration briefly described above differs from that contemplated in the program originally launched by the Air Force. The earlier plan called for spin stabilization of the pod containing the payload, a six inch focal length camera without image motion compensation, and a very short exposure time. Such a configuration could be available as much as six months sooner and would involve somewhat less technological risk (because of its reliance on a proven method of stabilization) than the one presently proposed. On the other hand, it would require the use of fast film which results in grainy photography and would yield a resolution of only sixty feet on the ground. To carry through the development of the original configuration and at the same time to undertake the development of the modified configuration in parallel would have obvious advantages but would add

to the total cost of the program and would complicate the problem of maintaining cover. On balance it is believed, (a) that efforts should be concentrated on the development of the more sophisticated modified version and (b) that the earlier availability date of the original configuration does not justify the cost in terms of funds and effort of continuing its development in parallel with the modified configuration.

5. Administration: CORONA is being carried out under the authority of the Advanced Research Projects Agency and the Central Intelligence Agency with the support and participation of the U.S. Air Force. ARPA has authorized, and will exercise general technical supervision over, the development of the vehicle. Detailed supervision of vehicle development is being performed by the Air Force Ballistic Missile Division acting as agent for ARPA. The Ballistic

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Missile Division is responsible also for the provision of necessary ground facilities, which are in any case required for the WS-117L program. CIA is participating in supervision of the technical development, especially as applied to the actual reconnaissance equipment, is undertaking all procurement that must be handled covertly, and has general responsibility for cover and for the maintenance of security. In the operational phase actual missile launchings will be carried out at Cooke Air Force Base by technical staffs of the companies concerned. Tracking will be carried out from stations being established by the Ballistic Missile Division. Recovery will be accomplished by a Navy task force. The line of command for these field activities of launching, tracking, and recovery will be through the Ballistic Missile Division. Subject to approval by the appropriate political authorities, the general schedule of launchings will be determined by the availability of vehicles and launching facilities. Specific timing within this schedule will be determined so far as possible on the basis of weather prevailing over target areas. For both cover and control purposes, weather will be reported through an already existing CIA channel and firing dates will be selected by the Central Intelligence Agency.

6. Cover and Security: As noted above the initial step taken to place this undertaking on a truly covert basis was the cancellation of the program already started by the Air Force as a part of its WS-117L development. The cover and security arrangements already made or contemplated are as follows:

a. Subsequent to the ostensible cancellation, limited numbers of individuals in the participating companies were cleared for and advised of procedures to be employed in CORONA. Compartmentation of this project from other activities is being established in a satisfactory manner in all of the companies and an internal cover story is being worked out for use in each company to explain to unwitting company personnel the nature of the compartmented and highly classified work which will be going forward. Generally speaking the personnel actually employed in the design and production of the classified reconnaissance equipment must be witting of its true purpose.

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b. Since actual missile firings attract public attention, a cover explanation will be required during the operational phase to explain plausibly the dozen or more launchings that will take place and the recovery operations which will be carried out by the Navy and will involve considerable numbers of Naval personnel. A cover story for certain parts of the developmental work and for some or all of the firings will explain these observable events as parts of a program to conduct experimental space flights with laboratory animals. Partly in support of this cover, but also for their own inherent scientific value, a recovery capsule suitable for carrying an animal and appropriately instrumented will actually be developed and a number of biomedical launchings and recoveries will be undertaken. It is planned that when reconnaissance equipment is to be launched, the pod containing it will be substituted for the biomedical pod just before firing and it is believed knowledge of this substitution can be limited to a few witting individuals in the launching crews. As a supplementary cover story it may be possible to explain some of the firings as events in a program of nose cone re-entry tests.

c. Great technical ingenuity and carefully worked out procedures will be required to maintain the plausibility of either or both of these cover stories. Although planning is still at an early stage, it is believed that this can be accomplished. It would be highly desirable, however, not only to provide an innocent explanation of the quite unconcealable firing and recovery activities but also to conceal the fact that the vehicle ever enters into orbit, since the suspicion will inevitably arise that any orbiting vehicle, however described, is in fact being used for reconnaissance. With this objective in view, the possibility of describing the vehicle as a missile rather than a short-lived satellite is being studied. If this appears feasible the cover stories will be appropriately modified.

d. The strictest security control is being maintained over all aspects of CORONA. All communications which reflect the existence of this project are handled within Top Secret procedures. A list of all individuals who are witting of the project is maintained. Individuals are cleared for and made knowledgeable of the

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project only on a strict need-to-know basis. Additional clearances may be granted only with prior approval from the CIA project office and this authority will not be delegated to any other organization concerned with the project.

7. Procurement: Of the total procurement required for CORONA, as large a proportion as possible will be handled relatively overtly as a part of the WS-117L and other programs. In accordance with this general plan, both the Thor booster, which is produced by Douglas for a number of military applications, and the Lockheed second stage vehicle, which (as noted above) is being developed for WS-117L, will be procured by the Air Force. The Thor boosters will be allocated from a group of deliveries already earmarked for certain miscellaneous Air Force programs (including re-entry tests and biomedical programs). The second stage vehicles will be allocated from production already scheduled for the WS-117L program. Only the pods containing reconnaissance equipment and the recoverable film cassettes will be procured covertly by the Central Intelligence Agency. Production of only the covert items will be compartmented in the several companies. The responsibility for systems integration and final assembly will rest with Lockheed. Arrangements are being made which will permit Lockheed's production, testing, and the bulk of its check-out activities to be compartmented and securely carried out up to the moment when the reconnaissance pod is substituted for a biomedical or instrumented nose cone payload.

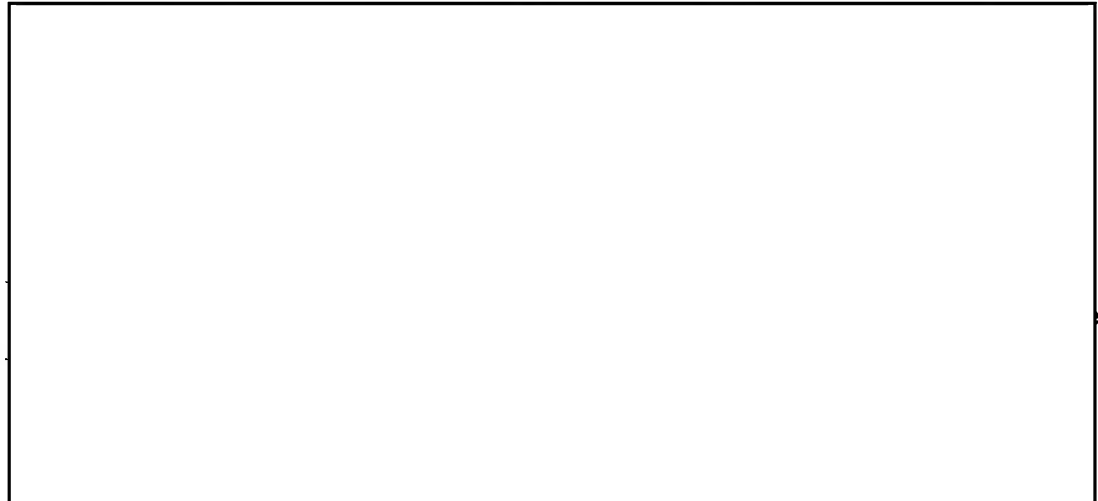
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c. In addition to the foregoing costs for development and procurement of hardware there will be significant operational costs. Moreover certain ground facilities, including especially two new launch-equaling pads at Cooke AFB and certain tracking facilities, will be built sooner than they would otherwise be needed. It would be difficult to make a meaningful estimate of costs of this character properly chargeable to CORONA and no such estimate has been attempted. The ground facilities required for CORONA would in any case be needed for WS-117L. Certain operational costs may properly be treated as developmental costs for WS-117L and certain operational costs (for example part of the cost of search and recovery) are not truly additional costs since they represent the use of military resources already in being. These costs must in any event be charged to other programs for reasons of cover and will be absorbed by those programs.

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S E C R E T



DPS-0025

25 April 1958

MEMORANDUM FOR: The Comptroller

SUBJECT: Project CORONA

1. This is to advise that this date I have approved subject project in the amount of for FY 1958.

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2. You are directed by this memorandum to seek release of the above amount from the Agency Reserve for Contingencies as an unprogrammed requirement for which other funds are not currently available.

3. The Office of Special Assistant for Planning and Development has the responsibility for obtaining the required documentation to support the expenditure of these funds. This Office is also responsible for maintaining appropriate accounting records clearly setting forth the funds received and the expenditure thereof. Such supporting documentation and accounting records will be subject to audit by the Audit Staff of the Agency at the appropriate time.

(Signed)
ALLEN W. DULLES
Director

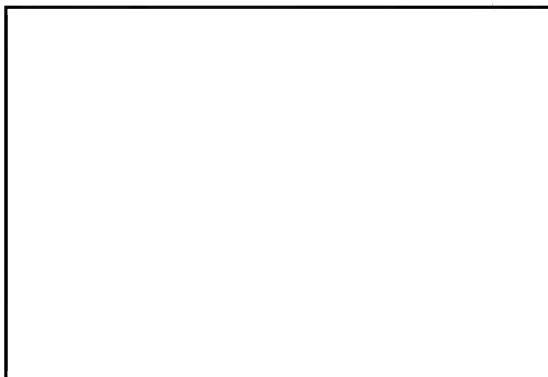
CONCUR:

Richard M. Bissell, Jr.
Special Assistant to the
Director for Planning
and Development

Lawrence R. Houston
General Counsel
28 Apr 1958

S E C R E T

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25 April 1958

WORK STATEMENT

DEVELOPMENT OF A SATELLITE RECONNAISSANCE
AND RECOVERY SYSTEM

Develop and provide, except as specifically set forth below, all equipment, services, and facilities necessary to complete a program of photo-reconnaissance of the Soviet Union. The photo-reconnaissance system shall have the following design parameters and objectives:

- a. A satellite-borne system compatible with the WS-117L system but employing the Thor booster.
- b. The design will be compatible with the overt biomedical program of WS-117L.
- c. Photographs shall be obtained at a ground resolution of 25 feet or better (as defined in the basic WS-117L contract) with a locational accuracy objective of ± 1 mile.
- d. Maximum possible ground coverage shall be obtained consistent with the ground resolution requirements and payload capability of the booster system.
- e. Latent image film shall be recovered by means of ballistic re-entry and land or sea recovery.
- f. The center of the recovery area shall be within 200 nautical miles of a designated location with a dispersion (90% of impacts) of $x = \pm 200$ nautical miles, $y = \pm 75$ nautical miles or less.

Delivery of equipment to the flight test and operations shall be in accordance with the attached schedule. The actual firing dates will be governed by target operational factors. The dates set forth on the delivery schedule represent the flight readiness dates.

COR-0016

The following shall be provided by the Government and shall not be developed or supplied under this contract:

a. Thor boosters, associated receipt checkout and launch facilities, equipment and services.

b. All items and services developed or used on the WS-117L program which can profitably support this reconnaissance program. These elements will be programmed overtly in appropriate quantities and in a timely fashion, as part of either the basic WS-117L or the biomedical satellite programs, or of other programs as may be determined but will actually be intended to support this recoverable reconnaissance program. The intent is to retain as many elements of the overall operation in an overt status as possible. Where an item or service can be programmed openly without revealing its ultimate usage, it will be charged to the cover program and not to this contract.

c. Recovery ships and/or aircraft, and their normal operating personnel and support. (Special equipment, training or trained personnel required for search and recovery will be provided by the contractor).

d. Special receipt and checkout space and facilities at the launch site.

Establish and maintain technical and management control of such sub-contractors as are required for the proper execution of the work statement. Major sub-contractors include:

a. ITEK Corporation will develop and manufacture the reconnaissance camera and associated equipment.

b. General Electric Company will develop and manufacture the re-entry body.

Technical direction of the program is the joint responsibility of several agencies of the Government.

In the interest of effective management, however, such direction will be provided primarily by and through the Air Force Ballistic Missile Division acting as the agent for all interested components of the Government. A Project Officer will be established in BMD as the single day-by-day point of contact for the contractor. This Officer will have authority to make on-the-spot decisions within the scope of the work statement on all matters pertaining to the program other than those of major importance. From time to time the Government agencies concerned will jointly review the progress of the program. The Government will make arrangements to permit the prompt rendering of major decisions concerning the program which cannot be made by the Project Officer.

Special security measures will be required throughout the program. The complete security plan, clearance of facilities and of individuals knowledgeable of the program, and other matters relating to security will be under the direction of a designated authority within the Government. The contractor will provide such special security measures within his own facilities, sub-contractors' facilities, or Government facilities provided for this project, as may be required to conform with the security plan.

Prepare monthly letter status reports which present in brief form the technical and fiscal status of the program. The fiscal status shall show separately the status of the major subcontractors.

Attachment:
Delivery Schedule

Total 3 pages w/1 1-page attach.

DELIVERY SCHEDULE

ITEM	CY 1958												CY 1959											
	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D			
DESIGN RELEASE																								
Structure & Installations			x																					
Auxiliary Power Unit			x																					
Antennas			x																					
Ground Equipment			x																					
PROTOTYPE																								
Fabrication & Assembly					x																			
Test						x																		
MOCKUP																								
Complete Space Utilization			x																					
Complete Weight & Balance				x																				
FLIGHT UNITS																								
Assembly & Test								1	1	1	1	2	2	2	2									
Spare Units								1	1															
FLIGHT SCHEDULE												1	1	1	1	2	2	2	2					

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23 June 1958

CORONA COVER STORYRequirements:

1. Unclassified story for use in public relations.
2. Classified story for use in areas where CORONA requirements are apt to become known to personnel working on the WS-117-L program.
3. Explanation for individual contractors to use when having to account for their relations with other companies.

Unclassified Story:

In view of the current international race to develop a means whereby man can be safely returned from outer space, it would appear best to explain all launchings as being tests of re-entry utilizing short-lived missiles. The capsule could thus be explained as a recoverable device containing instruments that will measure the gravity forces and other phenomenon associated with re-entry such as the deceleration forces and heat pulses imposed upon the vehicle during re-entry into the sensible atmosphere. Such studies will gradually gather together data, through the use of instruments, mice and primates, which scientists will use to develop a safe and reliable means for re-entry of human life as experiments progress to that stage.

In a situation such as this, the program must be able to account for the entire series of launchings. Public interest will naturally be aroused by the press who can be counted upon to follow the series very closely. The concern of the press will not always begin with the actual launching, for there will be occasions when they learn of the preparations being made at the launch site. The program, therefore, should be prepared to state the purpose of each launching, and at some future time, announce the results. The immediate concern of the press will most likely be to learn whether the particular missile went

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into its prescribed orbit. They will then expect to be advised as to the success of the re-entry, following up, at some future date, with inquiries as to the scientific knowledge obtained from such flights.

With the above in mind, the most logical procedure to use in dealing with the press would be to announce the first few launchings as tests of the primary vehicle. These would be followed by a series of instrumented flights with re-entry being attempted. Actually, one or several of these launchings should be bio-medical, though no mention of this fact need ever reach the press or the general public. The launching of a primate under the cover of an instrumented flight will enable the program to prove the safe return of the primate first, thus avoiding possible public embarrassment through a premature public announcement. Data obtained from such a flight could then be withheld for use in support of a photo-recon launching; the primate tests being used for its cover. Under no circumstances should there be any special or unusual precautions associated with a photo-recon launching. There should be a normal announcement to the press, either before or after the actual launch, depending upon the timing of their concern, utilizing bio-medical or bio-astronautical studies as the purpose of the flight.

If this sequence of launchings is followed, there will always be data available from previous launchings to adequately cover the CORONA missions and satisfy the hunger of the press and general public.

It is recognized that several personnel assigned to the launch pad will have to be cleared and told the true mission. Specifically, those coming in physical contact with the missile after it has reached the launch pad will have to be made knowledgeable of its mission. Others associated with the launching to a lesser degree, who are not in a position to know that a camera has replaced the primate but do know that a primate is not being launched, should be told that in the best interest of national security, public announcements are being altered. The purpose of this will be stated as being a means of denying the opposition a step by step progress report of the test series. Persons to whom this statement will be made should be impressed with the fact that this is not an attempt to hide failures or mistakes but rather it is a protective measure. The actual

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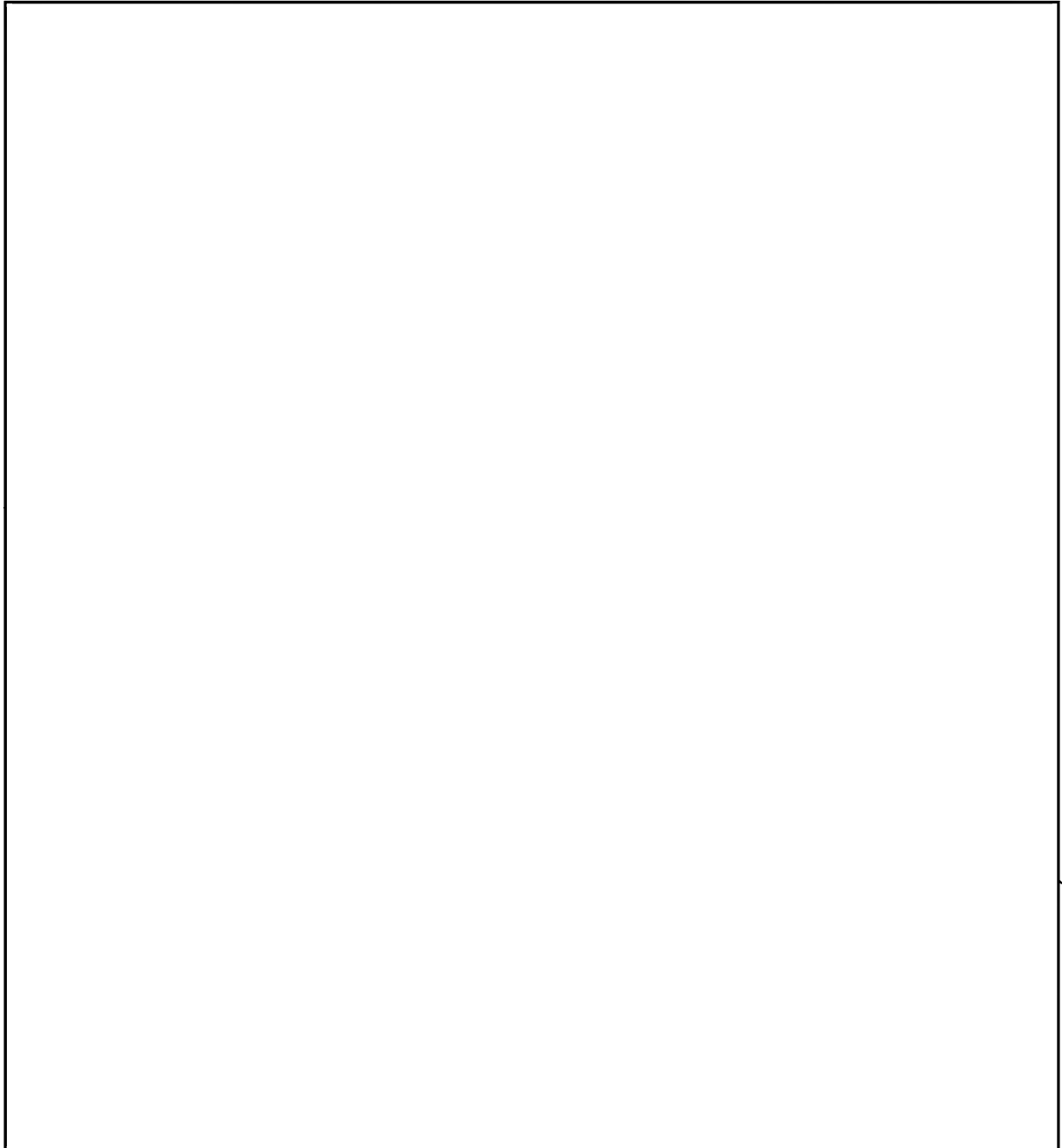
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number of persons so informed should be kept to a minimum so as not to reduce the value of the statement; the theory being, that if a large number are told, it becomes general knowledge, whereas, if a few are led to believe they have been given classified information, they will and are bound to protect it.

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25 June 1958

MEMORANDUM FOR: Director, Advanced Research Projects
Agency
Assistant Secretary of the Air Force
(R & D)

SUBJECT: Financing of Project CORONA

1. Under date of 15 April 1958, an outline of the above project (COR-0013) was submitted for the approval of higher authority after discussion with you and with Dr. James Killian. As you were advised shortly thereafter, the approval was granted. I was, however, given specific instruction with respect to the financing of this project. I am conveying the substance of this instruction to you at this time because it is relevant to arrangements which I believe are currently under discussion between the Advanced Research Projects Agency and the Air Force.

2. The project outline contained the following estimates and statements with respect to financing:

a. That covert procurement would require about [REDACTED] which would be provided by the Central Intelligence Agency.

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b. That first and second stage vehicles for twelve firings would cost approximately [REDACTED] dollars and that this procurement would be financed "for the most part by ARPA through the Air Force."

3. With respect to the first of these two categories of costs, the CIA has obligated [REDACTED] and is about to obligate an additional [REDACTED] to Lockheed Aircraft Corporation. It now appears likely that at least another [REDACTED] will be required for the items to be covertly procured and this will be covered by CIA with FY 1959 funds.

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4. The instruction referred to in Paragraph 1 above is relevant to the second category of costs, those of first and second stage vehicles. The instruction itself applied to both covert and overt development and procurement and was to the effect that "all funding for development and hardware must come from: (a) the Central Intelligence

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Agency and (b) the Advanced Research Projects Agency." The intent of this instruction was that funding for these purposes should not be provided by the Air Force.

5. I am confident that the arrangement which I understand is now contemplated, whereby the Air Force will obligate certain funds for CORONA in advance of reimbursement by ARPA, would be consistent with the foregoing instruction, since this sequence of events has been necessary with a number of ARPA programs. I feel, however, that if ARPA does not intend ultimately to fund vehicles procured for CORONA, this change of plans should receive appropriate clearance.

6. The language quoted in Paragraph 4 above of course leaves open the possibility that this Agency should fund a larger part of the whole CORONA program than contemplated in the project outline. Although this course of action is not precluded on policy grounds, the need for it was not foreseen, because what is now CORONA had been planned and authorized as a part of WS-117L before being split off as a separate, covert project, and its funding was assumed to be possible from already approved programs. It is recognized that the cost of first and second stage vehicles for CORONA was underestimated and that various ARPA programs including the acceleration of 117L require additional funding. The provision of sizable amounts in addition to those already budgeted would, however, raise serious problems for the CIA. Accordingly, if these developments render impossible the funding of overt procurement for CORONA by ARPA, the financial status of the project should be reviewed by the knowledgeable senior officers of the Department of Defense and this Agency.

(Signed)

RICHARD M. BISSELL, JR.
Special Assistant to the Director
for Planning and Development

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9 August 1958

MEMORANDUM FOR: General Andrew J. Goodpaster

SUBJECT: Project CORONA

1. Herewith is a revised estimate of the cost of Project CORONA which I promised to prepare for you. Its primary purpose is to explain how and why cost estimates have changed since submission of the original outline (COR-0013 and COR-0014) on 16 April.

2. Dr. Killian has been over this memorandum. Copies of it will be made available for information to Mr. Quarles and to Mr. Stans. In addition to the foregoing, who were present when this matter was discussed in Dr. Killian's office on 5 August, I am sending a copy to the Director, Advanced Research Projects Agency.

(Signed)
RICHARD M. BISSELL, JR.
Special Assistant to the Director

Attachment:
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COR-0065

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8 August 1958

PROJECT CORONA

1. Under date of 15 April 1958 an outline (document number COR-0013) of the above Project, including an estimate of its cost, was submitted for the approval of higher authority after discussion with the senior officers of the organizations concerned. The desired approval was granted and was accompanied with the specific instruction that all funding for development and procurement of hardware for CORONA must come from (a) the Central Intelligence Agency, and (b) the Advanced Research Project Agency. Partly as a result of this instruction and partly because the assumptions underlying the final estimates in the Project outline were incorrectly stated, it appears desirable to present a revised estimate at this time.

presented on 20 April 1958.
 2. The Project outline contained the following estimates and statements with respect to financing:

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a. That covert procurement of the payloads for twelve CORONA vehicles would require about [REDACTED] dollars which would be provided by the CIA.

b. That twelve Thor (first stage) boosters and Lockheed second stage vehicles would cost approximately [REDACTED] on the basis of a rather arbitrary allowance of [REDACTED] per completed vehicle.

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c. That this procurement of vehicles would be financed for the most part by ARPA through the Air Force but that there was some question concerning the allocation of the cost of the Thor boosters.

d. That in any case the whole cost of the basic vehicles (but not of the payloads) would be funded within then approved programs.

3. The following are the specific circumstances that now require revision of the foregoing statements:

a. The allowance quoted in paragraph 2.b. above of [REDACTED] per unit for the cost of the

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25X1A vehicles was incorrect. This figure was furnished for inclusion in the Project Outline on the assumption that the Air Force would absorb the cost of Thor boosters. [REDACTED] is the unit cost of the Lockheed second stage vehicle only. That of the Thor is approximately [REDACTED]. Accordingly, the true cost of each completed vehicle, including first and second stages (but excluding payload) amounts to [REDACTED]

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25X1A b. The instruction referred to in paragraph 1, above, ruled out the absorption of any part of these costs by the Air Force. Accordingly, the cost to ARPA of 12 completed vehicles will be [REDACTED] instead of [REDACTED] as stated in the Project Outline. 25X1A 25X1A

c. In addition to the 12 Thor/117L vehicles which will be equipped with CORONA recoverable reconnaissance payloads, some 7 additional launchings of the same basic vehicle are programmed. Two of these will be instrumented vehicles for second stage propulsion and guidance tests; two will have as their primary purpose the testing of the recoverable capsule and recovery procedure but will carry small animals; and three will be biomedical vehicles carrying primates. The last named group of three are believed justified without reference to CORONA for the contribution they will make toward the Man-in-Space program but they will also serve significantly to improve the cover of the CORONA firings. The Thor test firings are essential to CORONA but will also flight test the second stage vehicle, which is essential to the basic 117L program. Thus some part of the cost of these seven non-CORONA vehicles could properly be charged to CORONA, since they are in varying degrees necessary for, or essential to, its success. On the other hand, any specific allocation of these costs would be arbitrary, since these seven firings also contribute or are essential to other programs in varying degrees.

4. It is understood that ARPA programs have been revised in the light of the above circumstances to include funds for 19 Thor/117L vehicles but that a problem may remain with respect to the cost of the biomedical recoverable capsules.

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This could affect CORONA since elements of the recovery system are common to CORONA and the 'biomedical program and part of its cost is being borne by the latter.

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25 November 1958

MEMORANDUM FOR: Major General Jacob E. Smart
Assistant Vice Chief of Staff, USAF

SUBJECT: Distribution of Responsibilities
for CORONA

1. Two papers drafted and approved in April 1958 give a brief outline of the responsibilities of the several organizations concerned with Project CORONA. The first paper was a Project Outline submitted under date of 15 April 1958 to the White House for approval after approval by Mr. Roy W. Johnson for the Advanced Research Projects Agency, Mr. Richard E. Horner for the Air Force, Brigadier General Osmond J. Ritland for the Air Force Ballistic Missile Division, and Dr. James R. Killian. The second document was a Work Statement given to the prime contractor under date of 25 April 1958 which had been drafted jointly by representatives of BMD and this Agency.

2. The following is the paragraph in the Project Outline which deals with the administration of the program:

"CORONA is being carried out under the authority of the Advanced Research Projects Agency and the Central Intelligence Agency with the support and participation of the U.S. Air Force. ARPA has authorized, and will exercise general technical supervision over, the development of the vehicle. Detailed supervision of vehicle development is being performed by the Air Force Ballistic Missile Division acting as agent for ARPA. The Ballistic Missile Division is responsible also for the provision of necessary ground facilities, which are in any case required for the WS-117L program. CIA is participating in supervision of the technical development, especially as applied to the actual reconnaissance equipment, is undertaking all procurement that must be handled covertly, and has general responsibility for cover and for the maintenance of security. In the operational phase, actual missile launchings will be carried out at Cooke Air Force Base by technical

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staffs of the companies concerned. Tracking will be carried out from stations being established by the Ballistic Missile Division. Recovery will be accomplished by a Navy Task Force. The line of command for these field activities of launching, tracking, and recovery will be through the Ballistic Missile Division. Subject to approval by the appropriate political authorities, the general schedule of launchings will be determined by the availability of vehicles and launching facilities. Specific timing within this schedule will be determined so far as possible on the basis of weather prevailing over target areas. For both cover and control purposes, weather will be reported through an already existing CIA channel and firing dates will be selected by the Central Intelligence Agency."

3. The following is the paragraph from the prime contractor's Work Statement which sets forth the procedure for supervision of the contract by the U.S. Government:

"Technical direction of the program is the joint responsibility of several agencies of the Government. In the interest of effective management, however, such direction will be provided primarily by and through the Air Force Ballistic Missile Division acting as the agent for all interested components of the Government. A Project Officer will be established in BMD as the single day-by-day point of contact for the contractor. This Officer will have authority to make on-the-spot decisions within the scope of the work statement on all matters pertaining to the program other than those of major importance. From time to time the Government agencies concerned will jointly review the progress of the program. The Government will make arrangements to permit the prompt rendering of major decisions concerning the program which cannot be made by the Project Officer. Special security measures will be required throughout the program. The complete security plan, clearance of facilities and of individuals knowledgeable of the program, and other matters relating to security will be under the direction of a designated authority within the Government. The contractor

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will provide such special security measures within his own facilities, subcontractors' facilities or Government facilities provided for this Project, as may be required to conform with the security plan."

4. With respect to the opening sentence of the statement quoted in paragraph 2, above, it should be noted that the wording was carefully devised to give expression to a White House desire. It had been expressly stipulated when the Project received oral approval that all funding for research and development and for the procurement of hardware should be provided by the Central Intelligence Agency and by the Advanced Research Projects Agency and that the Ballistic Missile Division should act as their executive agent in the management of the program.

5. In practice, the management of this program was handled exactly in accordance with the statement quoted in paragraph 3, above and proceeded extremely smoothly until major financial problems developed in September 1958 and gave rise to a protracted review of both the financial status and the content of both the CORONA and SENTRY programs. In the course of the review, a number of individuals and organizations became involved in managerial decisions concerning (a) the allocation of costs, (b) the best use to be made of certain of the Thor-boosted flights in the newly-named DISCOVERY series, (c) cover stories and publicity, and (d) possible modifications in the SENTRY program. Such multiple participation in these decisions inevitably gave rise to considerable confusion.

6. It now appears that the first three sets of decisions have been substantially made and that the fourth is unlikely directly to affect the DISCOVERY series, or within it the schedule of CORONA flights. There would appear to be a possibility, therefore, that responsibility for day-to-day managerial decisions could revert in most matters to the Ballistic Missile Division and in certain others, especially covert procurement, cover, and security, to this Agency. The Advanced Research Projects Agency, Headquarters USAF, and Headquarters ARDC/USAF would of course wish to follow the program and would be concerned with any policy decisions.

(Signed)

RICHARD M. BISSELL, JR.

Special Assistant to the Director

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28 November 1958

MEMORANDUM FOR THE RECORD

SUBJECT: Additional Release from the Reserve for CORONA

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2. Some months ago it became apparent that additional funds would be required in the current fiscal year to cover over-runs and to fund certain costs originally expected to be paid by the Department of Defense. These were changes which it was desirable to shift from the relatively overt ARPA/Air Force contract with Lockheed to the Agency's covert contract for reasons of security and cover. About mid-November the financial position with respect to the whole Project became sufficiently clarified to permit an approach to the Bureau of the Budget for an additional release for these purposes. Following a meeting of Mr. Veatch of the Bureau with representatives of ARPA and my staff, Mr. Gates Lloyd and I discussed this matter further with Mr. Macy on 21 November.

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7. Mr. Macy said these explanations were helpful and that he would act on this matter as soon as he could have another consultation with Mr. Veatch, since the complex and unstable element in the equation appears to be Department of Defense accounting. I impressed upon Mr. Macy the fact that we needed these funds urgently and hope he did not miss the implied suggestion that we cannot afford to wait until that distant day when the Pentagon's program was stabilized.

8. For the record, the undersigned will never again assume any responsibility for the success of a major program without having a reasonable degree of control over its funding either through reliance on Agency funds or by means of an iron-clad agreement with the Department of Defense.

(Signed)

RICHARD M. BISSELL, JR.
Special Assistant to the Director
for Planning and Development

cc: DD/S

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4 December 1958

MEMORANDUM FOR: Deputy Secretary of Defense
Special Assistant to the President for
Science and Technology

SUBJECT: Proposed Curtailment of Project CORONA

1. I have been kept advised of the more important problems that have arisen from time to time with respect to Project CORONA, and in particular I have been aware of the review of that Project and of the SENTRY Project conducted by the Advanced Research Projects Agency during the past several months. As of two weeks ago, I was given to understand that agreement had been reached among all concerned on certain minor changes in schedules which had a bearing on the cover explanation for CORONA but that in other respects plans for the Project remained firm.

2. I now understand, however, that the Advanced Research Projects Agency has proposed to cut the CORONA schedule by one-third in order to free for other purposes funds previously committed to this Project. One of these purposes is a new series proposed for Calendar Year 1960 as a follow-on to CORONA but using different equipment.

3. I am well aware of course that CORONA is being financed for the most part by the Department of Defense and that the availability of funds for this activity is bound to be affected by changes in the general financial situation and plans of the whole Defense establishment. It may well be that the proposed curtailment of the CORONA schedule is wise in the light of the many competing, high priority requirements for funds. Nevertheless, in view of the manner in which the decision to establish CORONA as a separate Project was originally made, I would like to suggest that we meet to discuss the status of this Project before the curtailment decision is finally made.

(Signed)
ALLEN W. DULLES
Director

cc: D/ARPA
Asst. Secty AF/R&D

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MEMORANDUM FOR THE SECRETARY OF THE AIR FORCE
ATTENTION: Under Secretary Malcolm A MacIntyre
SUBJECT: Public Information - Project DISCOVERY

In confirmation of our several conversations, there is attached herewith for your information data and a procedure for public release relating to the Project DISCOVERY program at Vandenberg Air Force Base. The information which may be released is contained in the attached press release and a series of questions and answers. The initial release will be issued by the Department of Defense in the near future. Pending this release, no data relating to this program should be issued by the Department of the Air Force.

In accordance with our agreement, this office has accomplished the necessary clearances throughout the Department of Defense, the OCB, and in the Executive Office of the President.

In view of over-all policy restricting press coverage and public information on firings from Vandenberg Air Force Base, it is requested that all interested agencies within the Department of the Air Force be advised of the contents of this release, the questions and answers relating thereto and the requirement that publicity be limited entirely to the data contained therein.

A preliminary press plan, to be circulated through public information channels for concurrences or comment, is attached for your information. This press plan will be officially transmitted through public information channels, and will, after coordination, cover procedures for further public release on the DISCOVERY series. When releases have been authorized, every effort should be made to insure public understanding that the DISCOVERY series is not associated with project 117L.

Any questions requiring responses beyond the information contained in these documents should be referred to the Director, ARPA. Your attention is invited to the fact that both the launching site and

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the components in the vehicle itself contain elements of military security. This is indicated in the press release and should serve to allay questioning beyond that contained in the press release and the questions and answers.

Roy W. Johnson
DIRECTOR

3 Incls:

Press Release
Questions and Answers
Press Plan

6 November 1958

PROPOSED INITIAL PRESS RELEASE:

The Department of Defense will attempt to launch its first satellite from Vandenberg Air Force Base California, Pacific Missile Range late this year or early next year, it was announced today by Roy W. Johnson, Director of the Advanced Research Projects Agency. This satellite is part of a series of missile and vehicle launchings designated "DISCOVERY" which will be performed under the direction of ARPA by the Ballistic Missile Division, Air Research and Development Command, Department of the Air Force.

The purpose of this series is to further the development of a number of systems and techniques which will be employed in the production and operation of space vehicles. Initial launchings will have as their primary objective the testing of the vehicle itself and of vehicle subsystems including propulsion and guidance. Later vehicles in the series will carry biomedical specimens and will seek valuable data on environmental conditions useful to the NASA/ARPA joint Man-in-Space program. Live animals will be carried aloft and their recovery attempted in certain of the flights in this series which will serve to develop the techniques involved in providing a suitable environment and recovery.

Much of the data expected to be derived from the "DISCOVERY" series, such as the results of the biomedical flights, will be of general scientific interest and will be unclassified. Other results which will be highly significant for the development of later systems and techniques for space navigation, could be of potential significance to U.S. security and as such will be classified.

The "DISCOVERER" vehicle consists of two stages both of which were originally developed for other programs. The first stage is a Thor booster produced by Douglas Aircraft Company. The second stage is produced by the Lockheed Aircraft Corporation, Missile Systems Division. They were chosen on the basis of technical and scheduling considerations and because they could be combined with a minimum of modifications. The combination is believed capable of orbiting considerably heavier satellites than any previously launched by the United States. The basic vehicle will carry a number of different payloads specially designed for this series. Initial versions of the DISCOVERER will orbit for short periods of time at relatively low altitudes.

Question: Is the Discoverer a reconnaissance satellite?

Answer: No

Question: Is it part of the Weapon System 117L - or Sentry - or Pied Piper program?

Answer: No. Originally, the use of the Thor booster and certain other programs were included in the Weapons System that has, at various times, been publicly identified as a reconnaissance system. The Thor program was separated from this system early this year and assigned by ARPA directive to the Discoverer series. In effect, this enabled ARPA to accelerate the Discoverer program without prejudice to any other component of the weapons system.

Question: If the Discoverer is not part of WS117L, and if it is not a reconnaissance satellite, will it make a contribution to a reconnaissance satellite program?

Answer: Ultimately, the Discoverer, like any satellite that achieves orbital capacity, can be expected to make a contribution to every other satellite program. However, reconnaissance as such is still very much in the research stage and must, of necessity, be considered in terms of a future development.

Question: How many Discoverer launchings will be attempted?

Answer: As yet, no precise number has been established. Because of the nature and variety of the experiments involved and the fact that some will orbit for short periods of time, it is expected that a considerable number will be launched.

Question: Why is Discoverer being placed in a polar orbit?

Answer: Polar orbit is the only one from Vandenberg AFB with hardware presently available. Eastward launch from Vandenberg is prevented by safety considerations. Launch to the West would entail an unacceptable speed penalty.

Question: Why is a low altitude orbit being used?

Answer: High altitudes are not possible with the weight-thrust ratio established for the Discoverer. Because of testing instrument requirements, a rather heavy payload is contemplated.

Question: Why not launch the Discoverer from Cape Canaveral?

Answer: The facilities at Cape Canaveral are overloaded. One of the purposes in constructing a missile range on the West Coast was to reduce the burden on the Atlantic Range.

Question: What is the weight of the Discoverer satellite?

Answer: It is expected to be heavier than any satellite previously launched by the United States. The satellite including the integrated second stage vehicle is expected to weigh approximately 1300 pounds, of which 300 pounds is payload including instrumentation guidance and power supply.

Question: How many stages does the launch vehicle have and of what does each stage consist?

Answer: The main stage is a modified Thor IRBM. The second stage is a new vehicle developed by Lockheed. It is powered by a Bell-Hustler engine. The second stage vehicle, after burn out, will orbit as an integral part of the satellite.

Question: Since it is biomedical, is it part of the joint NASA/MIS program?

Answer: It is a DOD contribution to the joint program.

NOTE: Any further questions should be deferred or referred to DOD as appropriate.

Question: How many Discoverer satellites are planned?

Answer: No more than 10.

Question: How many Discoverer satellites are planned?

Answer: No more than 10.

Question: How many Discoverer satellites are planned?

Answer: No more than 10.

PROPOSED INFORMATION PLAN FOR PROJECT DISCOVERY

A. OBJECTIVE OF PROJECT DISCOVERY

Beginning in late 1958 and extending into 1959, a series of satellites will be launched from the new Pacific Missile Range at Vandenberg A.F.B., California. These satellites will be powered by the Thor missile with a new high energy upper stage known as the Bell Hustler. As such, the program is, in certain respects, a follow-on vehicle program to the Thor-Able combination.

The project is divided into two distinct phases:

1. The first two flights will orbit 300 pound telemetry payloads into 300 mile orbits with orbital lives of perhaps 10 days. These first two flights will provide tests of hardware and payload components and also of the instrumentation and facilities of the Pacific Missile Range and its complex of ground environment stations located in Alaska and Hawaii and possibly the Antarctic.

2. Depending upon success obtained by the first 5 - 7 flights, additional launchings of the DISCOVERY series will take place during 1959 to place up to 500 pound recoverable satellite packages into 300 mile orbits having 24 - 48 hour orbital lives with planned recovery by aircraft or naval vessels upon signal by one or another of the available ground stations. These flights will comprise a series of biomedical experiments with two containing mice; later flights also containing primates.

No follow-on program will be finalized prior to the successful completion of at least five flights. Data derived from the program will be applied to reentry and recoverable satellite space programs of the DOD and NASA.

B. PUBLIC ANNOUNCEMENTS:

1. The objective of this information plan is to insure that the various launchings in Project DISCOVERY receive news treatment related to their actual missions. Public releases on the project will be strictly controlled to insure such treatment. In particular, these flights must be disassociated with any U.S. reconnaissance program for which they have no capability.
2. In recognition of the fact that the first two DISCOVERY launchings have missions distinctly separate from those of the remaining launchings in the series, this public information plan, aside from an initial general release (TAB A), applies to the first two launchings only. Following successful completion of the first two launchings or of the component and range test program, a comprehensive public information plan to apply to the follow-on reentry and recoverable satellite launches for biomedical experiments will be issued by DOD/ARPA. Until release of this second plan, no follow-on announcements relating to the biomedical DISCOVERY project will be issued. Issuance of the over-all plan is not being accomplished at this time because of the requirements that such a plan will await results of the first two launchings. Until release by DOD/ARPA, the follow-on program, other than the ARPA release at TAB A, will be classified Confidential.

3. As regards the first phase of project DISCOVERY, no releases or public briefings beyond the release and questions in TAB A will be made until after the first satellite launching has taken place.

4. The actual launch of the first DISCOVERY satellite vehicle should be treated in accordance with procedures established herein.

a. Should the vehicle fail within site of the launch area or prior to the achievement of conditions which might lead PMR to believe the payload was in orbit, the statement provided in TAB B should be made by the Commander VAFB. No other releases should be made.

b. Should the vehicle fail to place the satellite in orbit, but should conditions exist which require determination of this fact in interrogation of tracking stations during a time period required for one or more revolutions of the payload, the statement attached in TAB B will be made by the Commander VAFB. At the time of this release, fact sheets may also be made available to the public concerning the ground environment of the PMR and its associated tracking network.

c. Should the vehicle successfully place the payload in orbit, a press conference will be held at the VAFB as soon as orbit is determined. Participating in this press conference will be the Director ARPA, Commander, ARDC; Commander BMD, or their representatives. The press conference will be initiated by the Director, ARPA, who will make an announcement within the limits of TAB C. Public statements by these officials will emphasize the range and component test aspects of the launching. At the conclusion of the press conference, fact sheets will be made available at VAFB and the Department of Defense, Washington,

including data on the objectives of the launching, the booster and payload utilized, the organizations involved, and the PIR and its associated tracking stations. No indication will be given of future schedules nor will the facts relating to the second phase be elaborated upon. Analysis of telemetry and other data obtained from instrumentation of the vehicle may be released as appropriate. Interested agencies will develop and submit all proposed releases and fact sheets to DOD/ARPA where they will be approved prior to issuance.

5. Public releases of information on the launching of the second DISCOVERY vehicle in December 1958 or January 1959 should be in accordance with the procedures established herein for the launch of the first vehicle. However, in view of the fact that a new situation will pertain insofar as public information statements are concerned, TABS D and E will be substituted for TABS B and C, respectively.

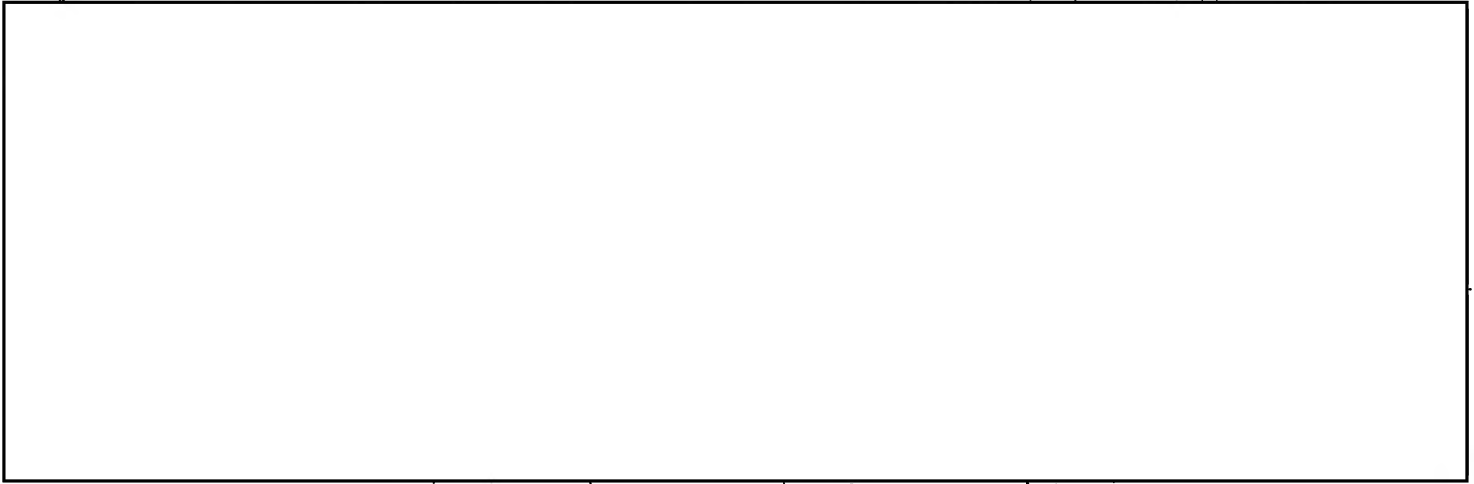
The press conference at VAFB to be initiated by the statement in TAB E will conform to the tone of the statement. The same guidance will pertain for fact sheets to be issued at VAFB and DOD, Washington, in the event of a successful launch.

No information will be given of future schedules or about the second phase of the DISCOVERY series.

6. This press plan, upon receipt of policy approval within OSD, including ASD (PA) and within the OCB, will be personally presented to all interested operating elements of Lockheed, BMD etc., and details thoroughly coordinated by a designated ARPA representative. Personal

data, home town color, and exhibits will be developed in support of this plan by Commander, BMD.

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TAB B

Under the direction of the Advanced Research Projects Agency the Air Force launched the first of the "DISCOVERY" vehicles for test purposes at _____ hours today from the PMR Vandenberg AFB, California. The vehicle in its first test launch, (exploded on the launch pad, failed after _____ seconds of powered flight and destroyed itself, exploded after _____ seconds of powered flight, veered off course after _____ seconds of powered flight and was destroyed, failed to orbit the satellite although the launch appeared perfect).

The launching was intended not only as an initial test of the DISCOVERY vehicle but also to test the tracking, telemetry, and range safety facilities of the PMR. (The flight of the vehicle was successfully telemetered and tracked by the facilities of the range until missile failure, until communications with the satellite were lost _____ minutes after launch). Data is being analysed to determine cause of (malfunction, failure to orbit the satellite).

TAB C

Under the direction of the Advanced Research Projects Agency, at _____ hours today at the new Pacific Missile Range, the Air Force launched a 300 pound earth satellite using the new DISCOVERY booster system to place the payload in a unique polar orbit.

The satellite, having a period of _____ minutes, was placed into a nearly circular 300 mile orbit and is expected to have a life of about 2-5 weeks. The payload contains a power supply and communications and telemetry equipment only. No scientific experiments are included because of the extent of internal telemetry components needed for test purposes.

The objective of this latest U.S. satellite is two-fold, and complete success has already been achieved on both counts. First, the DISCOVERY launching vehicle functioned perfectly in this first test flight. Second, the satellite was launched to test the tracking, telemetry and range safety facilities of the PMR and its associated tracking network. This network has stations in Alaska, Hawaii. All functioned, and are functioning as planned.

This is the world's first satellite with a polar orbit and its nearly circular orbit is testimony to the advancement in U.S. missile guidance and control techniques. This orbit is derived from the location of Vandenberg AFB and the PMR.

The DISCOVERY booster gives the United States an improved vehicle for future space programs. This new combination was developed by the BMD of the Air Force under ARPA sponsorship.

TAB D

Under the direction of the Advanced Research Projects Agency, the Air Force launched a second DISCOVERY test vehicle at ____ hours today from the Pacific Missile Range at Vandenberg AFB, California. In its second test launch, the vehicle (exploded on the launch pad, failed after ____ seconds of powered flight and destroyed itself, exploded after ____ seconds of powered flight, veered off course after ____ seconds of powered flight and was destroyed, failed to orbit the satellite although the launch appeared perfect). As with the first launching day's event it was intended not only as an additional test of the DISCOVERY vehicle but also as a further test of tracking, telemetry and range safety facilities of the PMR. (The flight of the vehicle was successfully telemetered and tracked by the facilities of the range until missile failure, until communications with the satellite were lost ____ minutes after launch). Data is being analysed to determine cause of (the malfunction, failure to orbit the satellite).

The initial launch of the DISCOVERY vehicle took place on ____ Nov. 1958, and resulted in (failure as the boost blew up on the launch pad, failure as the booster blew after ____ seconds of powered flight, partial success as the booster was destroyed after ____ seconds of powered flight, complete success as the booster placed a 300 pound test payload into a nearly circular polar orbit.

TAB E

Under the direction of the Advanced Research Projects Agency, at ____ hours today at the new Pacific Missile Range, the Air Force launched a 500 pound earth satellite using the new DISCOVERY vehicle to place an instrumented payload in a unique polar orbit. (This success comes after the initial attempt to launch a similar satellite on ____ Nov. 1958. This marks the second successful launch of a 500 pound earth satellite using the DISCOVERY booster system within a period of two months). The satellite, having a period of ____ minutes was placed into a nearly 300 mile orbit and is expected to have a life of about two years. The payload contains a power supply and communications and telemetry equipment (similar to those contained in the first DISCOVERY satellite). As with the first DISCOVERY launching, the objective of this latest satellite was two-fold and (again complete success has already been achieved on both counts. First, the DISCOVERY launching vehicle functioned perfectly in the vehicle's second successful test flight, and we are satisfied that it has demonstrated its application for future U.S. space programs. Second, the satellite was launched as an additional test of the tracking telemetry and range safety facilities of the FMR and its associated tracking network. This network, with stations in Alaska, Hawaii and Antarctic, (again) functioned and is functioning as planned. This is the world's second satellite with a polar orbit. The fact that we have again attained a nearly circular orbit is a great compliment to the work that has been done on the part of the U.S. missile organizations in the development of guidance and control techniques.

(Proposed Statement for the Press on DISCOVERER Series)

8 December 1958

Project DISCOVERER Satellite Program Announced by DOD

The first attempt to launch a satellite over the Pacific Missile Range will be made late this year or early next year from Vandenberg Air Force Base, California, the DOD announced today. This launching will be part of a series designated Project DISCOVERER--to be carried out by the Department of the Air Force under the direction of the Defense Department's Advanced Research Projects Agency.

The purpose of ARPA's Project DISCOVERER is to continue development of a number of systems and techniques which will be employed in the operation of space vehicles. Although no precise number of launchings has been scheduled for the project, it is expected a considerable number will be attempted because of the nature and variety of the experiments involved and the fact that the satellites will orbit for short periods of time.

The initial launchings primarily will be to test the vehicle itself, especially its propulsion and guidance. Later, the satellites will contain biomedical specimens to seek data on environmental conditions which will be useful to the man-in-space program being carried out jointly by ARPA and the National Aeronautics and Space Administration. As part of this program, live animals also will be carried aloft and their recovery attempted in order to develop the techniques involved.

The first DISCOVERER vehicle is a 2-stage rocket. The main stage is a modified THOR IRBM produced by the Douglas Aircraft Company. The second stage is a new vehicle produced by the Lockheed Aircraft Corporation and powered by a Bell-Hustler engine.

The first DISCOVERER launched satellites are expected to weigh approximately 1300 pounds. This includes the weight of the second stage vehicle which will orbit as an

integral part of the satellite after burn-out. Initial versions of the DISCOVERER satellite are designed to orbit for short periods of time at relatively low altitudes. High altitudes are not possible with the weight thrust ratio established for the DISCOVERER.

Much of the data expected to be obtained from Project DISCOVERER such as results of the biomedical flights, will be of general scientific interest and will be unclassified. Other results which will be highly significant for the development of later systems and techniques for space navigation involve national security and will be classified.

STATINTL

(Prepared by
Project Cover Officer)

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11 March 1959

MEMORANDUM FOR: Brigadier General A. J. Goodpaster
The White House

SUBJECT: Project CORONA

1. Herewith, slightly edited but otherwise unchanged since you read it, is the paper on CORONA which summarizes its history and proposes the extension of the Project. This paper has been seen by Dr. Herbert York, and he confirms that the Department of Defense concurs in this proposal.

2. The proposal has been reviewed with Dr. Glennan and Dr. Killian, and I believe that the latter is favorable to it. Dr. Killian has not seen this actual paper since he is away for a few days.

(Signed)
RICHARD M. BISSELL, JR.
Deputy Director
(Plans)

Attachment:
COR-0372.

TS/COR-0379

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11 March 1959

PROJECT CORONA

1. The original outline of the CORONA Project (Document No. COR-0013) was submitted for approval on 15 April 1958. As then planned it called for twelve flights of the CORONA vehicle during the calendar year 1959. The total separately accountable cost was estimated as slightly over [REDACTED] made up of [REDACTED] to be provided by ARPA for second stage vehicles and [REDACTED] to be funded by the Central Intelligence Agency for the classified payload.

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2. Under date of 8 August 1958 a report on this Project was submitted which pointed out that the original cost estimate was incomplete on two grounds. First, it contained no allowance for the Thor boosters (first stage vehicles) on the assumption that these would be furnished by the Air Force. Second, it included none of the costs that would be incurred with either four engineering flights to be carried out before the first CORONA launch as part of the development of the CORONA vehicle or of three biomedical flights planned in part for cover purposes. This report gave a revised figure of [REDACTED] Dollars as the cost of the CORONA flights including Thors but still excluding the associated flights referred to above.

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3. Rather extensive discussions took place in the early autumn of 1958 concerning the cost of the whole program, since christened the DISCOVERY program, in the context of the ARPA budget for FY 1959. In the course of these discussions it appeared that certain cost estimates had to be revised upward. Moreover, it appeared that if an appropriate share of development and facilities costs were allocated to CORONA the total cost would come to something in excess of [REDACTED] although it was recognized that the allocation of these overhead items between related programs is essentially arbitrary. When this cost study was completed in October, it still appeared that the entire DISCOVERY program of nineteen flights (twelve CORONA plus four engineering plus three biomedical) could be funded within existing budgets.

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4. During late autumn of 1958, a further study was made of both the DISCOVERY and SENTRY (WS-117L) programs

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by ARPA and the Air Force. In November, decisions were made concerning the ARPA FY 1960 budget. As a result of these revisions, and in the light of the program review just concluded, the decision was made by ARPA to cancel four of the twelve CORONA flights and two of the three biomedical flights and thus to reduce the DISCOVERY program from 19 to 13 flights. This decision was influenced by the expectation that the Air Force would be prepared to fund additional flights using CORONA vehicles and payloads which would be scheduled late in CY 1959 and in CY 1960, so that the ARPA cut would be more than made good.

5. Under these circumstances, production schedules were left unchanged and development continued at full speed pending further studies of (a) intelligence requirements during 1959 and 1960, (b) the effects of modifications in the SENTRY program, which contemplates the use of an Atlas-boosted vehicle, larger payload, and more sophisticated equipment, and (c) the availability of funds. These investigations led to the following conclusions:

a. There is a high priority requirement for photographic reconnaissance of the USSR both in 1959 and in 1960 by numbers of flights sufficient enough to give complete coverage twice in each year. Because of the prevalence of cloud cover, twice over coverage will be required to give even moderately complete photography of the more important areas. The most important single objective is to require further evidence on the status of the ICBM program during the phase when construction of launch sites may be expected to be in progress.

b. The SENTRY program could not be accelerated to provide the required coverage in 1960.

c. The extended CORONA program can be financed within approved Air Force and Department of Defense budgets.

6. Accordingly it is proposed that the presently reduced CORONA program of eight flights in 1959 be augmented by twelve additional flights, four to be restored in 1959, and eight to be conducted in 1960. On this basis there will be a total of twenty CORONA flights. The

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requirement for twelve in 1959 as against eight in 1960 reflects an anticipated improvement in systems reliability and performance. The whole DISCOVERY series will include in addition to the 20 CORONA flights, four engineering flights as originally planned (one of which has aborted and a second carried out with nearly full success) and one biomedical flight which is largely for cover purposes.

7. The proposed restoration of four flights in 1959 and an addition of eight flights in 1960 will require additional funding in the amount of [REDACTED] of which [REDACTED] will be in 1959 funds, [REDACTED] in FY 1960 funds, and [REDACTED] in FY 1961 funds. 25X1A 25X1A 25X1A

The breakdown of additional cost by purpose and funding agency is shown on the attached table. In accordance with the decision made at the inception of CORONA, all of these additional funds, with the possible exception of the cost of additional payloads, will be transferred to ARPA which will authorize procurement by the Ballistic Missile Division, ARDC. Procurement of additional payloads may be undertaken by CIA (as with the initial CORONA program) or by BMD depending on the requirement for security. BMD will act as executive agent for the DOD and the CIA in the operational phase including launching, tracking, and recovery operations.

8. The maintenance of security, that is effective concealment of the true purpose of these missile flights, will be exceedingly difficult at best and will give rise to serious problems. The DISCOVERY series has been described as a developmental activity. Specific ostensible missions are being defined for each flight and data will be accumulated ostensibly resulting from the DISCOVERY flights to be furnished on an unclassified basis or with low classification to interested persons. No matter how carefully cover explanations are developed and supported, however, it is impossible to prevent speculation in the technical press and by Communist governments to the effect that the DISCOVERY flights involve reconnaissance of some kind. Accordingly, even if security is successfully preserved, that is any unauthorized disclosure by persons witting of the true purpose of DISCOVERY is avoided, the cover for this operation may be eroded. If it is desired to preserve the cover and deny the true purpose of the 1960 flights as well as of those scheduled for 1959, a decision to this effect should be made immediately so that administrative and security procedures may be designed with this end in view.

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29 April 1959

MEMORANDUM FOR: Deputy Secretary of Defense

SUBJECT: Approval of Extension of Project CORONA

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Herewith is a note, the purpose of which is to record certain decisions made some weeks ago and previously reported to you on the extension of CORONA. You will remember that following a meeting [REDACTED] and I had with you and subsequent discussion with Dr. Killian and Mr. Glennan, a paper recommending the extension was handed to General Goodpaster. Some days later he advised me that a favorable decision had been made which was reported to you and others in the Department of Defense. It was not until several weeks after the basic decision, however, that I received guidance from the same source on the handling of security and cover for the extended operations (as reported in the attachment). I understand there has been some uncertainty on this aspect of the matter and in any case it seems desirable to have a written record of the decisions. I am also attaching herewith in case you should wish to refer to it, the memorandum which was given to General Goodpaster and on the basis of which the decisions in question were made.

(Signed)
RICHARD M. BISSELL, JR.
Deputy Director
(Plans)

2 Attachments:
COR-0266/A
COR-0372

TS/COR-0436

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5 May 1959

MEMORANDUM FOR: Deputy Secretary of Defense

SUBJECT: Approval of Extension of Project CORONA

1. You will remember that, following a review of the SENTRY and CORONA Programs last fall and a series of conferences in December and January, agreement was reached among the interested agencies that it would be desirable to extend the CORONA Program through the summer of 1960. A recommendation to this effect, which included an outline of the funding proposed for the extension of the program, was addressed by the Under Secretary of the Air Force to the Deputy Secretary of Defense on 11 February and was subsequently approved by the latter. This paper served as the basis for a fuller memorandum (COR-0372) which set forth the same proposal against the background of a review of CORONA. With the concurrence of the senior officers concerned, this memorandum was presented to higher authority and approval granted for the proposed extension on the terms therein set forth.

2. The proposal thus favorably acted upon requested (without recommendation) an immediate decision as to whether an effort should be made to preserve the security surrounding the CORONA Project and to maintain its cover so as to deny the true purpose of the 1960 flights as well as those scheduled for 1959. Although not stated in writing it was understood that the decision on this point might have a bearing on administrative arrangements since the decision to preserve security and cover would presumably imply the continuation of present organizational arrangements and of the present distribution of responsibility. Subsequent to the rendering of the basic decision referred to above the question of security was further considered and the decision was made to embark on the extended program with every effort and intent to continue along the same lines as in the past but to review the status of security and cover in approximately six months' time. It was contemplated that if security had deteriorated, or if there had been a change of political policy, the decision could then be made to surface the program

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but that in the meanwhile security precautions should be observed and planning should be on the assumption that the security status of the program would remain unchanged through the 1960 series.

3. Therefore, it is assumed, in accordance with the above decisions, that:

a. Appropriate action is proceeding to schedule the four flights restored to the calendar year 1959 program and the eight flights proposed for calendar year 1960.

b. The Central Intelligence Agency will initiate procurement of additional payloads as needed.

c. Funding will be provided in accordance with the proposal as submitted and approved.

d. Organizational arrangements and the distribution of responsibilities for the program will in the absence of further notice remain unchanged.

It is understood that the security and cover status of the program and related organizational arrangements may be reviewed at a later date.

(Signed)
RICHARD M. BISSELL, JR.
Deputy Director
(Plans)

cc: Dir/ARPA
Gen Goodpaster

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7 July 1959

MEMORANDUM FOR: Brigadier General Andrew J. Goodpaster
SUBJECT: Proposed Supplement to CORONA Project

Herewith is a brief statement, which I hope is largely self-explanatory, concerning a proposed Supplement to the CORONA Project. You should be aware that the initiative in undertaking this additional activity came from various sources in the Department of Defense. For a number of months, two different projects have been under consideration, one by the Army and one by the Air Force, to accomplish the purpose of this activity. After most careful consideration by Dr. York, a decision was made to handle the activity within the DISCOVERER framework. This Agency was asked and agreed to assume the same responsibilities with regard to the Supplement that it already carries in the CORONA program. I would hope to receive an indication from you that the plan is satisfactory, either in its present form or with any changes that may be considered desirable.

(Signed)
RICHARD M. BISSELL, JR.
Deputy Director
(Plans)

Attachment:
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7 July 1959

SUPPLEMENT TO CORONA PROJECT

1. With the concurrence of the Secretary of Defense, and on his recommendation, it is proposed to include in the series of space vehicle firings under Project CORONA, administered by this Agency and the Advanced Research Projects Agency of the Department of Defense, four additional satellite flights during the summer of 1960 for the purposes of obtaining precise geodetic fixes and an extension of existing datum planes throughout the Soviet Union. Total cost of this project is estimated to be approximately , to be funded from within current Department of Defense appropriations.

2. This addition to the program is deemed to be one of critical importance to precise location of target complexes associated with the U.S. deterrent posture. It is also considered urgent that this data be obtained at the earliest possible time because of the anticipated availability of a large missile force in the 1961-62 time period and in the light of the possibility that observations of this type may politically and technically be denied at a later time.

3. The program will be administered in the same manner as Project CORONA and within the same organizational framework. The DISCOVERER program will be employed as cover. This new program will, of course, be subject to careful review in the light of the first year's experience with CORONA prior to the initiation of flight operations. Approval of this program is recommended.

COR-0541

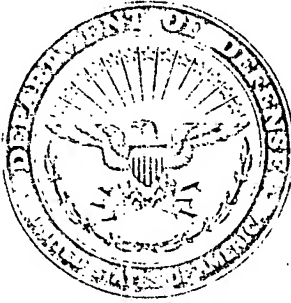
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November 15, 1962
NUMBER S - 5200.13

SecDef

Department of Defense Directive

SUBJECT Security Policy for Military Space Programs (U)

I. PURPOSE AND SCOPE

This directive establishes security policy for military space programs and is applicable to all components of the Department of Defense.

II. GENERAL POLICY

- A. Adequate protection of military space programs is vital to the security of the United States. Therefore, the details of all DoD military space programs, including identification, mission, scope, capability, payload, launch, control or recovery operations, and results are classified.
- B. The security principle of need-to-know for military space projects must be vigorously enforced within DoD, DoD advisory groups, and by Defense contractors.
- C. Rigorous care must be taken to insure that information revealing the identification, mission, scope, or capability of specific military space projects and programs does not appear in unclassified documents and presentations.
- D. Unauthorized disclosure by Defense and Defense contractor personnel of the results, effectiveness, capabilities, and potentialities of specific military space projects and programs must be eliminated.

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III. PROCEDURES

- A. Military space projects and space vehicles henceforth will be identified by means of numerical and alphabetical designators selected and assigned at random; except for boosters, names or nicknames no longer will be used.
 - 1. Military space projects will be identified by a numerical designator.
 - 2. Military space vehicles will be identified by an alphabetical prefix followed by a numerical designator, such as Orbital Vehicle (OV-7), Final Stage Vehicle (FSV-2), etc.
- B. The new method of identifying military space vehicles and projects will not be associated with their payload or mission except under the most strict security procedures and will be published in as few documents as possible. Titles of project documents will not refer to the mission or payload associated with the project. Launch or recovery schedules for specific payloads or mission areas will be classified **SECRET** or higher.
- C. Preparation and dissemination of over-all reports, development plans, and other documents on military space projects and programs will be severely limited and controlled. Detailed need-to-know justification will be required on the basis of need for specific information, rather than for particular documents. The number of persons authorized a blanket need-to-know will be sharply curtailed and continuously controlled.

IV. RESPONSIBILITIES

- A. The heads of all DoD components having responsibilities for military space projects and programs, or aspects thereof, are responsible for insuring adherence to the provisions of this directive.

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B. The Secretary of the Air Force is responsible for:

1. Determining and assigning identification nomenclature for all military space projects and vehicles.
2. Maintaining a central registry of all military space project numbers and space vehicle designators.

V. EXCEPTIONS

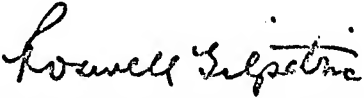
- A. This directive does not apply to missiles or boosters.
- B. Exceptions to the provisions of this directive may be granted on a case by case basis by the Secretary of Defense or his designee.

VI. EFFECTIVE DATE AND IMPLEMENTATION

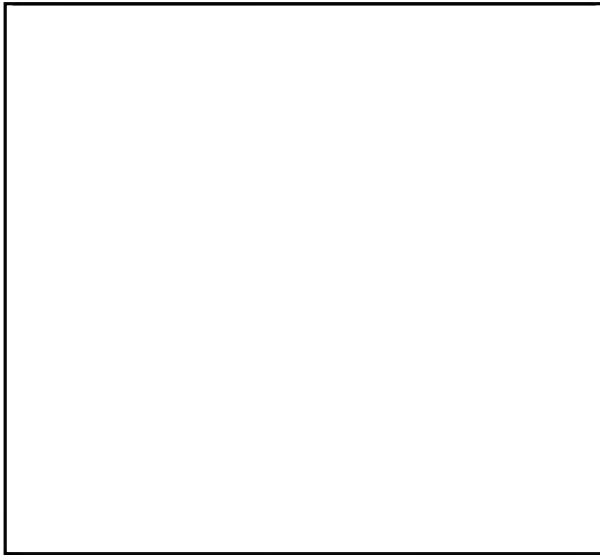
- A. This directive is effective immediately. Existing documentation on military space projects and programs will be superseded by new documents as rapidly as they can be prepared and issued.
- B. Every component of the Department will revise its regulations and other instructions to conform with the provisions of this directive.

VII. CANCELLATION

DoD Directive S-5200.13, dated 23 March 1962, is hereby canceled.


Deputy Secretary of Defense

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Excerpt from Record of Actions, National Security Council
502nd Meeting, 10 July 1962

The National Security Council, at its meeting on 10 July 1962 with regard to NSC Action #2454 (Space Policy and Intelligence Requirements), discussed the report of the ad hoc committee on political and informational aspects of satellite reconnaissance policy, prepared in response to National Security Action Memorandum No. 156, and approved the recommendations of the report as amended, as follows:

Recommended Policy:

1. The United States should maintain the legal position that the principles of international law and the UN Charter apply to activities in outer space and, specifically, that outer space is free, as are the high seas.
2. The US should therefore continue to avoid any position implying that reconnaissance activities in outer space are not legitimate. Similarly, we should avoid any position declaring or implying that such activities are not "peaceful uses."
3. The US should, to the extent feasible, seek to avoid public use of the term "reconnaissance" satellite, and where appropriate use instead such broader and more neutral terms as "observation" or "photographic" satellites.
4. Further studies should be made on an urgent basis to determine whether there are releasable data, such as mapping information, or procedures such as occasionally calling TIROS and NIMBUS vehicles "photographic" satellites, which would help create wider public acceptance of space observation and photography.
5. NASA should study urgently the possibilities of accelerating bilateral international cooperation to develop non-military space activities involving space observation, perhaps including photography.
6. It is recognized that the US cannot entirely avoid or disclaim interest in reconnaissance, so that where feasible the US should also seek to gain acceptance of the principle of the legitimacy of space reconnaissance.

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7. When confronted by specific Soviet pressure to outlaw reconnaissance activities in space, the US should continue to take a public stand for the legitimacy of the principle of reconnaissance from outer space, the precise form and extent of which would depend upon the circumstances of the confrontation.

8. The US should not at this time attempt to conduct a truly clandestine program (by which we mean a program with covert and unregistered launchings, and public denial that the US is engaged in reconnaissance). However, the US should pursue the research and development for a standby capability for clandestine operations in case circumstances ever make such operations necessary.

9. The present practice of not identifying individual military space launchings by mission or purpose is sound. We believe, however, that there should also be a more open (but not more detailed) public reference to the general over-all military program. An appropriate nickname for public identification should be given to the over-all military program, with its objectives intentionally stated in broad and general terms. All military launchings would be described in terms of the general objectives of the over-all military program. No specific mission would be ascribed to any particular launch.

10. The US should not, at this time, publicly disclose the status, extent, effectiveness or operational characteristics of its reconnaissance program.

11. Strict control over public statements and backgrounding concerning reconnaissance satellites should be exercised to ensure consistency with the policy guidelines suggested in these recommendations.

12. No public attention should be directed toward development of anti-satellite capabilities, and any publicized demonstration of developmental work and any actual test of such a capability should require White House approval, with full account given to the adverse effects for our reconnaissance satellite program. We should avoid any indications that physical countermeasures to reconnaissance vehicles would be justified, and as appropriate the US should make a positive effort to propagate

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the idea that interference with or attacks on any space vehicle of another country in peacetime are inadmissible and illegal.

13. The US should discreetly disclose to certain allies and neutrals selected information with regard to the US space reconnaissance program, making each disclosure orally and at a time and in a manner that will preserve the essential security of our program while impressing upon them its importance for the security of the Free World. Disclosures should be made in a manner that will preclude acquisition by the Communist Bloc of usable evidence of an official US acknowledgement that we are conducting a satellite reconnaissance program. Proposals for such disclosures should include clearance by the National Reconnaissance Office.

14. The US should in private disclosures emphasize the fact of our determination and ability to pursue such programs because of their great importance to our common security, despite any efforts to dissuade us.

15. The US should note in connection with private disclosures that, except in some cases for specifically defined disarmament agreements, the US cannot agree to (a) declarations of the precise purpose of all satellites, (b) declarations of the equipment of all satellites, (c) general requirements for advance notification of all satellite launchings and the tracks of satellites, (d) pre-launch inspection of the satellites, or (e) a specific definition of peaceful uses of space which does not embrace unlimited observation.

16. The possible roles of space reconnaissance in disarmament inspection arrangements or in creating military stability should be further studied.

17. The US should stand by the disarmament proposal for a provision in Stage One of a Treaty on General and Complete Disarmament banning weapons of mass destruction from being carried in satellites, and providing for advance notification and inspection of all missile and space launchings to insure that ban. The US should continue to exclude any ban on reconnaissance satellites.

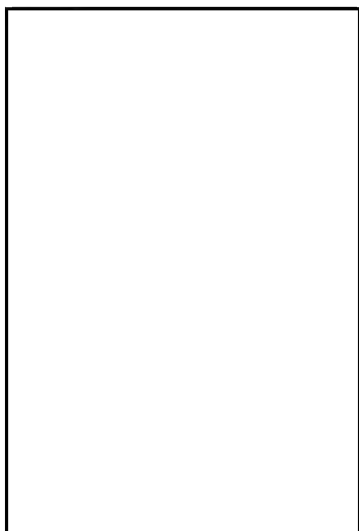
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18. The US should not, in presenting more detailed proposals for a separate group of measures to "reduce the risks of war," include advance notification of space launchings. If attempts are made by others to include space launchings with missile firings, the US should point out that (a) the trajectory of space vehicles can be distinguished from missile firings, so that space launchings would not be confused with missile firings, and (b) measures relating to disarmament of outer space, which we are proposing, include appropriate controls over space launchings.

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9 July 1963

MEMORANDUM FOR: Deputy Director of Central Intelligence

SUBJECT: Technical Management of CORONA Program

1. The satellite photo reconnaissance program which we know as CORONA was initiated under the auspices of the Reconnaissance Committee of the Foreign Intelligence Board. The program started at first as an interim to end after a year of operation when the Air Force SAMOS Program was to reach operation.

2. The program was placed under the Department of Defense's Advanced Research Projects Agency with the Air Force as executive agent. It was known overtly as DISCOVERER and began with engineering and biomedical payloads followed by covert camera payloads. The Air Force contracted openly for Thor boosters, Agena vehicles, and orbital control operations through Lockheed as prime contractor. The Central Intelligence Agency contracted covertly for cameras, recovery system adapted from the biomedical capsule, and for film and processing. The Central Intelligence Agency also controlled the target selection facet of mission planning and execution.

3. Within the Air Force the assigned tasks were vested in Space Systems Division in California. Within Central Intelligence Agency the tasks were executed by the staff of the Special Assistant for Planning and Development who reported directly to the Director of Central Intelligence. The specific individuals were Richard Bissell and Major General Osmund J. Ritland, who had been deputy to Mr. Bissell during U-2 development. At about monthly intervals a "suppliers meeting" was held to discuss status and problems encountered. Within this environment and due to the personal daily attention of Mr. Bissell, the Central Intelligence Agency emerged in the primary governmental role.

4. During 1959 nine DISCOVERER launches were attempted: five of which carried cameras, but none of these five produced useful photography. 1960 saw eleven launch attempts: eight with cameras, two of these produced useful photography.

5. During this period the technical substance of the Air Force SAMOS program changed from emphasis on readout

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systems to emphasis on recoverable systems. The management structure also was greatly modified with the placement of Major General Robert Greer in Inglewood, reporting directly to the Air Force Undersecretary and managing, at first, the E-6 segment of SAMOS, which was in some ways competitive with CORONA.

6. The CORONA camera had gone through three generations of technical improvement also and concurrent advances in both Thor and Agena permitted a convergent stereo camera configuration to be considered. This was recommended to the Secretary of the Air Force for adoption on a trial basis to provide exploitation experience prior to the then imminent E-5 and E-6 programs. By this time CORONA program funding had also changed from partly Air Force partly CIA to all Air Force moneys.

7. Prior to this time innovations in payloads had been decided upon by CIA, but with advice and consent from Air Force. The convergent stereo configuration was set at first at eight payloads, but remains today the basic MURAL payload.

8. The Air Force Undersecretary and Mr. Bissell, then Deputy Director for Plans, agreed on a change in management structure for this latest innovation. Lockheed, Ittek, General Electric, and Eastman Kodak were all given associate contracts. Dr. Charyk also insisted that a separate task, system engineering and technical direction, be defined. Because of reluctance to involve STL, predecessor to Aerospace in this kind of activity, in the CORONA program this task was given Lockheed.

9. By this time also the Space Systems Division project officer for CORONA was placed under direct control of the Undersecretary of the Air Force, bypassing normal command channels. This officer, Colonel Battle, insisted that the SETD function be contracted and funded through Space Systems Division. A Configuration Control Board made up of [redacted] CIA Operations Officer at Palo Alto, [redacted] CIA assigned technician in Washington, and Captain Johnson of Colonel Battle's office in SSD, was set up to monitor the SETD actions of Lockheed. Captain Johnson heads this board to which Colonel Howard of NEO, has been added. Also during this time General Greer was

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given authority over all satellite reconnaissance for Air Force.

10. In 1961 seventeen launch attempts were made, twelve of which contained CORONA payloads and seven produced useful photography. During 1962 twenty-one attempts were made, of which nineteen CORONA cameras were used and fifteen produced useful photography.

11. In the first six months of 1963 eight launch attempts were made in this program, five with CORONA MURAL payloads with three producing useful photography.

12. The last two successful missions exhibited recurrences of earlier supposedly solved problems.

13. On Mission 9054 one camera was afflicted with a static discharge problem which fogged the film. By chance the portions of fogged film coincided with cloud cover so the intelligence loss from that cause was not as great as in the past. Mission 9056 resulted in fogged film also more prevalent on one camera than the other, but this time a light leak is suspected. Both of these problems have occurred before and measures were taken to cure them. The static discharge problem of Mission 9054 is traceable to the waiving of certain tests of procedures in camera check-out which were instituted as a result of the static problem last year. The light leak on Mission 9056 may have come about through a similar relaxation of the careful attention needed to prevent such leaks which also have been encountered and cured much earlier; or through some material failure associated with a higher than normal temperature of the vehicle; or through some design defect associated with the special 240" focal length camera installation. This experiment failed completely.

14. For the past year the Air Force staff of Colonel Battle have done the "buy off" of payloads on behalf of the government. Up to then this function was performed by Office of Special Activities assigned officers. This cannot be taken as a condemnation of the current practice, however, except possibly in the case of Mission 9054.

15. Despite personal discussions of operational failures by both Mr. McCone and Dr. McMillan with top

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Lockheed officials, the record for 1963 so far is poor as against 1962 and 1961. The reasons are not all readily apparent. Many new faces have replaced the originals in Lockheed and Itek. Thor has grown to TAT. The Agena has progressed to Model D. ARGON and LANYARD have been added. These, plus other changes mentioned beforehand, have all come about with certain evolutionary pains.

16. In summary, it is my view that the CORONA program has fallen from a path of gradual improvement in reliability and excellence to one of regression. I think this can and should be reversed. My solution would be to pick technically competent, respected persons, one from CIA and one from Air Force to control the program substance as was done at the outset. One of these individuals will emerge in a prime role. Which one does is not crucial so long as the two can work together. This will be influenced by the solution of the DD/R - OSA question.

17. One of the key elements of this suggestion is the scheduled transfer of Colonel Battle from his present assignment to one in AFSC in September. His loss to the program will be hard, but it offers both an opportunity and a need for the Agency to re-establish its role in the CORONA program. If this move is taken properly the Air Force and contractors will be forced to think twice about the selection of key people on the program.

(Signed)

EUGENE P. KIEFER

Deputy Director

National Reconnaissance Office

cc: Dr. A. D. Wheelon

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29 January 1965

MEMORANDUM FOR: Deputy Director, Central Intelligence
SUBJECT: History of the CORONA System

1. The following memorandum is submitted for your information, and contains the history of the CORONA Program from initiation in March 1958 up to the present. The memorandum is divided into three sections. The first two: "Technical Development of the CORONA Program" and "Contractual Developments of the CORONA Program" are given as background of the third section: "Government Management." The information is presented in this manner as the technical developments and contractual arrangements provide a base and a prelude to the understanding of the government management developments.

2. Technical Development of the CORONA Program:

a. The first CORONA flights were made from a THOR-AGENA-A launch vehicle. The camera flown was a single f:5.6 scanning lens panoramic camera. The system resolution was in the neighborhood of 20 feet at the operating altitudes. The operating altitudes were rather high -- 120-150 N. Mi. With the limited performance of these early THOR-AGENA's and the primitive guidance system (which introduced large uncertainties in the injection parameters), the system was severely weight limited. The recovery vehicle was the Mark IIA. The recovery system was developed under cover of a biomedical program; the Mark II capsule could be used for flight of monkeys (such flights were not made). Following a development period of approximately 2-1/2 years, marked by 11 unsuccessful flights, success was finally achieved with a CORONA camera system in August of 1960. One "diagnostic" vehicle had been recovered one week earlier. Shortly thereafter, design improvements were proposed for the basic camera; and development was initiated on the C' unit. This camera was basically a f:3.5, 24-inch focal length system, with resolution to the order of 10 feet. This camera differed from C primarily in that the lens rotated continuously during operation, rather than scan-and-return. Continual improvements were being made concurrently in the AGENA and THOR vehicles to allow more

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positive injection of desired parameters with greater weight capabilities. The first C''' was flown in August of 1961 (approximately one year after the first successful flight of the original CORONA system).

b. The increased THOR-AGENA capabilities made possible the introduction of a two-camera stereo model. (The necessary recovery system modifications had been accomplished under the ARGON Program.) This new model, called CORONA/MURAL, was formally initiated in March of 1961 and first flown in February of 1962. The system consisted of two C''' cameras in a 30° convergent stereo configuration. Because of continual difficulties with the time recording mechanism used on the CORONA cameras, a digital clock from the ARGON Program was modified and substituted for the original clock. Auxiliary cameras for extended ground coverage at low resolution (index camera) and a stellar camera for accurate attitude determination were added in later versions.

c. Concurrently, developments were made in the flight programming and command capabilities. The initial CORONA camera had only one ground command (a selection of the operating speed of the camera). More elaborate controls on v/h control were instituted, and an on-off capability for the program was added. All flights to date have used minor modifications of the original Fairchild Camera and Instrument Corporation flight programmer for flight command of the camera. Currently, three parameters of v/h time dependence, 10 separate programs, stereo-mono operation, and sequences of off-on can be commanded from the ground.

d. Under the LANYARD Program, the increased performance capability of the Thrust Augmented THOR (TAT) was developed. This allowed almost doubling of the payload weight; a program was started under CORONA to double the film capacity and extend the useful mission life. This system, known as CORONA-J, used the basic MURAL camera with two recovery vehicles. The CORONA-J system was first flown in mid-1963. After a short period of program difficulties, the "J" System is operating satisfactorily and is providing the search surveillance for the community.

e. Two other programs were run concurrently with CORONA with a large overlap in technical personnel and

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management. The first of these was the LANYARD Program. LANYARD was a modification of the SAMOS E-5 System, designed to provide five-foot ground resolution photography with a swath width of about 40 miles. A single 66-inch focal-length F:6 panoramic camera was used. This camera could be operated in an interrupted stereoscopic mode or in continuous monoscopic. LANYARD was

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The second program was ARGON a program sponsored primarily by the Army Map Service and designed to establish a world-wide geodetic control network. A three-inch focal-length, low-distortion lens provided terrain coverage over a 70° field of view, at about 200-300 feet resolution. Fairchild Camera and Instrument Corporation (FCIC) was subcontractor to LMSC for camera development. Autometric Corporation was a working associate of LMSC, responsible for ground data reduction equipment. The ARGON Program was continued until recently, including a second procurement with FCIC as associate to LMSC. Two systems are still in storage; flight is being considered at the present. The ARGON System has provided a reasonable amount of geodetic control for the mapping community.

3. Contractual Development of the CORONA Program:

a. Under the management philosophy used for the 117-L Program, the covert side of the DISCOVERER or CORONA Program operated with Lockheed Missiles and Space Corporation as Weapons' Systems Manager/Prime Contractor. However, Mr. Bissell, through the monthly suppliers' meetings, exerted rather direct program control. This monthly suppliers' meeting management control technique had been used in the IDEALIST and in the OXCART programs. Under this prime contract for C, C' (follow-on procurement, similar camera to C), and C'', Itek was the first tier subcontractor for the camera; and General Electric was subcontractor for the recovery system development. FCIC was subcontractor to Itek on C and C'. With the changed Government philosophies on contractual arrangements, and in order to reduce program costs, the MURAL Program was initiated with Lockheed, Itek, and General Electric as associate contractors. Technical support of the Government management continued to be supplied by Lockheed under a Systems Engineering contract, initially planned to be contracted for the Air Force, but subsequently reverted to a CIA contract. Control of the

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associate contractors was vested in a Configuration Control Board with representatives of various Government offices. The covert contracts on the program were handled by the CIA Contracting Office. The funding on the original CORONA Program (covert contracts) was CIA, the Air Force funding the vehicle developments and the "biomedical" recovery capsule developments. Subsequent funding, until the NRO was established, was through the Air Force, although justification for funds was ultimately made by the Agency (Mr. Bissell); i.e., the "Air Force funding" was primarily a bookkeeping matter.

b. From the inception through May 1961, the following statement was an official part of the direction to the contractors: "Technical direction of the program is the joint responsibility of several agencies of the Government. In the interest of effective management, however, such direction will be provided primarily by and through the Air Force Ballistic Missile Division acting as the agent for all interested components of the Government. A Project Officer will be established in BMD as the single day-by-day point of contact for the Contractor. This Officer will have authority to make on-the-spot decisions within the scope of the work statement on all matters pertaining to the program other than those of major importance. From time to time, the Government agencies concerned will jointly review the progress of the program. The Government will make arrangements to permit the prompt rendering of major decisions concerning the program which cannot be made by the Project Officer." In May 1961, this statement was changed to read as follows: "Overall technical direction of the program is the joint responsibility of several agencies of the Government. In the interest of effective management, however, such direction will be provided primarily by and through the Air Force, Space Systems Division, acting as the agent for all interested components of the Government. A project officer established in SSD will be the single day-by-day point of contact for the Contractor. LMSD shall establish and maintain technical and management control of sub-contractors as are required for proper execution of the work statement. Major subcontractors are Itek Laboratories and General Electric Missile and Space Vehicle Department. Subject to the overall management of SSD/Headquarters, LMSD shall fulfill responsible

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systems management of the C''' program as Weapon System Contractor. Government approval of the technical decisions of the Contractor shall not be required prior to implementation, except as specifically set forth elsewhere in this contract. This provision should not, however, be construed in any way limiting the right of the Government to direct or redirect the technical aspects of the Contractor's efforts at any time." Essentially the same language was carried through on MURAL and "J" although now Itek and General Electric were associate contractors, and Lockheed was both an associate contractor and assistant engineering contractor.

c. While the project at SSD was the single day-to-day point of contact for the contractor or contractors, the Agency maintained a rather direct and frequent contact (in addition to the controlling role in monthly suppliers' meetings) with the working level people through the operations officer [redacted] who was located at the Palo Alto facility. [redacted] acted in a triple role. His primary responsibility was, of course, operations; as a secondary responsibility, he had mainly technical oversight. Third, he had limited authority as a contracting officer. In 1964, with establishment of the CORONA Project Office [redacted] under General Greer, [redacted] was detailed from Los Angeles to the Palo Alto facility to provide the technical contact with the contract and, as such, really assumed the second of [redacted] three roles.

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d. As a sidelight on contractor relationships, in the early phases of CORONA all contractors and subcontractors felt relatively free to discuss proposed changes and problems with all parts concerned. Final acceptance of the systems was performed by a Washington representative. Extensive communications between all parts concerned were generally prevalent, both cable and telephone plus frequent interchanges. Beginning in late 1961, and increasingly so as time progressed the contractors were restrained from direct interchange with Project Headquarters. By 1962, no cables could be released from the contractors at the Palo Alto facility to Project Headquarters without word-by-word approval from SSD. During late 1963 and 1964, communications channels dried up almost completely.

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4. Government Management:

a. The CORONA Reconnaissance Program started in March of 1958 under the joint direction of the Advanced Research Projects Agency and the CIA, with the support of the Air Force. Proposal work in early feasibility investigations had been performed earlier as part of Weapons System 117-L. The CIA was charged with the development of the reconnaissance equipment, security, cover, and covert procurement. The Air Force contracted and directed the detailed procurements on the overt side. These included the booster, the AGENA 2nd stage, control networks, launch facilities, and the basic recovery vehicle development under the Biomedical Program auspices. It appears somewhat mixed right now as to exactly who was doing detailed supervision of the cameras and associated equipment. (A small group of Ballistic Missiles Division in Los Angeles, basically charged with the photo systems under 117-L, consider that they had much of this responsibility. Some of these officers were: Col. Sheppard, Col. Oder, Maj. Conway, and Maj. Wienberg. Agency people concerned do not consider that this group had a strong or active role). Col. Battle of SSD was the official program director of the DISCOVERER Program, including both the Biomedical Program (cover program) and the operational flights. The CIA, under the direction of Mr. Bissell, then DDP, was in formal charge of the technical direction of the payload, and represented Project Headquarters. Messrs. Kiefer, [redacted], and Parangosky assisted Mr. Bissell in these early days. [redacted] participated somewhat later. In February of 1959 an inert THOR-AGENA was launched, followed by two non-camera-bearing test vehicles. The first camera was flown in June of 1959 but did not orbit. In November of 1959, the ARPA responsibility was transferred to the Air Force under direction of the Secretary of Defense. At this time, there had been no successful camera operations in orbit nor recoveries. By April of 1960, camera operation had been accomplished (primarily because of a change to a polyester based film, rather than the acetate base used earlier). A recovery system diagnostic program was instituted, culminating, in August 1960, with the first successful recovery from orbit. Later that month, a camera system was flown and film was recovered. It should be noted that during this period, and for several years thereafter, CORONA was looked on as a short-term back-up for the developing SAMOS Reconnaissance Systems.

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b. Management during this period was basically joint and, as is obvious from conversations with various persons involved, without a single unified head; however, apparently good working relationships were maintained. [] was the Chief Operations Officer for the CORONA Program on the West Coast. He was, at the time, assigned to the CIA and operated as the local Agency representative. Contact between the Government and both the prime and subcontractors was free and frequent. The original CORONA Program was extended without major system modifications (the C') and, in 1961, further extended with a major modification in the camera design (C''). The C'' was first flown in August of 1961. In 1961 Dr. Charyk, then Under Secretary of the Air Force, authorized the development of a dual camera-stereo configuration, known as "C MURAL." (The SAMOS E-6 system was concurrently under development.) By agreement, Dr. Charyk and Mr. Bissell changed the contractual arrangement of the MURAL Program. LMSC, Itek, and General Electric became associate contractors; and LMSC, in addition, was given the Systems Engineering Contract. Concurrently, a Configuration Control Board was established. The Board consisted of a representative from Col. Battle's office (Capt. Johnson), the CIA Operations Officer of Palo Alto [], and a CIA Project Headquarters representative []. Col. Howard, from NRO Staff, joined the Board shortly thereafter. The first CORONA/MURAL System was flown in February 1962.

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c. Rather early in the program, when severe technical difficulties were encountered, a high-level team of government officers were assigned responsibility of solving the problem. The committee was known as the "Autumn Leaves Committee," headed by Mr. Kiefer. However, as Mr. Kiefer notes in a memorandum of 12 March 1964, "During two periods of great technical problems, subsequent to the establishment of the CCB, the engineering direction was largely pre-empted by Dr. Scoville on an ad hoc basis." The first of these problems was the electro-static discharge fogging problem, which is still

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plaguing us to some extent.

d. Direction of the program proceeded under this Configuration Control Board until early in 1964. In late 1963 and early 1964, the Director, NRO played an increasingly strong role; and, in January 1964, specifically directed that all changes to the payload system be approved by himself, following review by the CCB. The CCB was not formally dissolved, but has not met since approximately March 1964.

e. From the inception of the program until 1963, the day-by-day technical direction of all contractors was under the general supervision of Col. Lee Battle, first in Ballistic Missiles Division and later in Space Systems Division (SSD). Col. Battle responded directly to Washington authorities: Mr. Bissell, Dr. Charyk, etc. The program was generally assigned (under the NRO) to Director, Program "B" in CIA. Col. Battle considered his line of command as separate from the SAMOS Program. His successor, Col. Worthington, responded somewhat to Gen. Greer, Director, Program "A," nominally assigned to SSD, but actually heading an office (SAFSP) reporting directly to the Under Secretary of the Air Force (Director, NRO). Early in 1964, as part of the Air Force move to assume full control of the CORONA Program, the program was transferred to a new office, directly under and reporting to Gen. Greer and headed by Col. Paul Heran. Col. Heran had earlier been in charge of several photographic systems under SAMOS, most recently E-6. Since that time, Col. Heran has been taking an increasingly strong role in the program, not using the CCB or associated mechanisms and reporting to Washington offices only through Gen. Greer.

f. During the major portion of the CORONA Program, [redacted]

[redacted] Budgeting information, etc., was also generated by CIA for submission. However, during 1964, budget submissions were made by the Director of Program "A" as part of the overall satellite reconnaissance program.

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g. Throughout the course of the CORONA Program from inception to date, CIA has had the responsibility for security and actual contracting. They have maintained this role primarily because of certain prerogatives of the Agency and methods of doing business.

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(Signed)
ALBERT D. WHEELON
Deputy Director for
Science and Technology

Drafter:
O/DDS&T [redacted] (29 Jan 65)

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(S) NATIONAL RECONNAISSANCE OFFICE
Washington, D.C.

Office of the Director

June 22, 1966

MEMORANDUM FOR: DIRECTOR OF RECONNAISSANCE, CIA
DIRECTOR OF SPECIAL PROJECTS, SAF

SUBJECT: CORONA Management Plan and Organizational
Responsibilities

The purpose of this memorandum is to set forth the CORONA management arrangements and assignments of system responsibilities which were approved by the NRP Executive Committee on April 26, 1966.

There follow specific instructions and guidance on CORONA management and assignments of system/sub-system responsibilities.

PROGRAM MANAGEMENT:

The Director, SAFSP, is designated as the CORONA System Project Director (SPD). In addition, the SPD will direct and supervise the development and production of various sub-systems as defined herein. The Director, SAFSP, will establish a CORONA System Project Office (SPO) to discharge assigned functions and responsibilities, and will appoint a Deputy Director, SAFSP, for CORONA who, as Deputy System Project Director (DSPD), will manage the day-to-day activities of the SPO.

The Director of Reconnaissance, CIA, will direct and supervise the development and production of the CORONA Payload Sub-Assembly, as defined herein, reporting directly to the DNRO. The Director of Reconnaissance, CIA, will establish a CORONA Payload Sub-Assembly Project Office (PSAPO), and designate a Director thereof, responsive and responsible through him to the DNRO for the total Payload Sub-Assembly development and production and to the SPD for overall system matters, as set forth below.

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DOD Directive 5200.10 does not apply

SPECIFIC SYSTEM RESPONSIBILITIES:

The Director, SAFSP, as SPD, is responsible for: overall system engineering (including master system specifications) and system integration (including major subsystem interface specifications); overall system master planning, programming, and budgeting; assembly and check-out of the system at the launch pad; launch and mission operations; capsule recovery; and delivery of film to DNRO-designated processing facilities.

In addition, the SPD is responsible for: the thrust-assisted THOR and THORAD boosters; the AGENA booster/spacecraft; procurement of the DISIC; the acquisition and operation of system assembly facilities (excluding the LMSC-AP facility) and launch facilities; on-orbit command and control facilities; and capsule recovery forces and equipments.

The Director, PSAPO, is responsible through the Director of Reconnaissance, CIA, to the DNRO for the total Payload Sub-Assembly development, production (excluding procurement of the DISIC), assembly and test; operation of the LMSC-AP facility; for adherence to master system specifications, interface specifications, and master project plans established by the SPD in accordance with the provisions of this management plan; and the provision of software support to the NRO Satellite Operations Center before, during, and after missions. By definition, the CORONA Payload Sub-Assembly includes the KH-4 cameras, the SI and/or DISIC, film transport mechanisms, the RV's, supporting structure and shell, and those other items normally installed and tested at the LMSC-AP facility.

In addition, the PSAPO is responsible to the SPD to assist and manage, as appropriate, those Payload Sub-Assembly system assembly and pre-launch activities at Vandenberg AFB, to certify at appropriate times that the Payload Sub-Assembly is ready, and to act as the principal Payload Sub-Assembly assistant to the SPD during pre-mission planning, on-orbit operations, and post-mission analyses.

SAFSP/CIA--OSP RELATIONSHIPS:

It is not possible, at this time, to forecast future engineering/performance trade-offs which may be made as

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detailed design and development of the J-3 CORONA proceed. The NRO objective in the CORONA Project is to acquire and operate the overall most effective search and surveillance satellite system possible within the constraints of time, technology, and available resources. The Payload Sub-Assembly contains the key element (i.e., the camera) of the system and, as such, its fundamental basic structural, dynamic, thermal, power, etc., requirements must be given proper weight in determining overall system configuration and characteristics. When the necessity does arise for a trade-off between the Payload Sub-Assembly and another sub-system in terms of total system performance, the SPD will always attempt first to resolve the problem in such a way as to minimize the effect on the sensor. However, such resolutions of interface problems must always be tested to assure that over-all system performance is not seriously degraded. Thus, both the SPD and PSAPO must analyze in terms of total system effectiveness when considering interface and trade-off problems.

Direct In this arrangement, the CORONA System Project Director (SPD) responsibilities will not include sub-system engineering, technical direction, or contract supervision for the Payload Sub-Assembly (except for DISIC procurement); the CIA will be responsible to the DNRO for these functions. The following discussion of management relationships is intended to clarify the division of responsibilities:

1. As stated previously, the SPD is responsible for overall system engineering and integration. In this capacity, he also is responsible for all sub-system interfaces. In such matters, the Payload Sub-Assembly Project Office is expected to be responsive to appropriate direction from the SPD. However, the SPD, in the exercise of this interface responsibility, will give special consideration to the basic environmental requirements of the Payload Sub-Assembly as established in consultation with the CIA.

2. On the other hand, the SPD is not expected to accomplish engineering on technical matters pertaining solely to the Payload Sub-Assembly, unless his assistance is requested by the PSAPO. SPD actions elsewhere in the system affecting interfaces with the Payload Sub-Assembly do require the concurrence of the PSAPO.

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Similarly, PSAPO actions which affect interfaces with other elements of the system do require the concurrence of the SPD.

3. The SPD is responsible for master planning, master programming, and overall budgeting; however, he is not authorized to alter program or budget estimates of the PSAPO. Conversely, the PSAPO is expected to program and budget in accordance with the master schedules issued by the SPD. (Note: CIA-OSP will submit budget estimates in the normal manner direct to the DNRO; however, the SPD will also include payload sub-assembly schedules and budget estimates in the System Project Plan for information purposes).

The most significant area of SAFSP/CIA-OSP relationship is that pertaining to interface between the sensor sub-system and other system elements. I cannot emphasize too strongly the need for close daily rapport between the respective offices. Representatives of both offices are expected to attend all meetings on subjects having possible interface impacts.

The SPD and PSAPO are expected to have free and full access to all information and data pertaining to the system. This includes, as appropriate, access to contractor plants, engineering staffs and test facilities. However, supervision and technical direction of the contractor's activities will be solely by CIA-OSP for elements of the Payload Sub-Assembly and by SAFSP for other system elements.

If either the SPD or PSAPO infers a possible interface effect resulting from an action by the other, he is expected to so advise the other promptly. When a possible problem of this nature is raised, it is to be resolved by the SPD and PSAPO without delay (if resolution in the field is not possible, the matter will be brought to my attention for decision).

Informal and direct communications between appropriate working personnel of both the SPO and PSAPO must be authorized and encouraged (when opposite project office personnel and contractors are involved, prior coordination with the Government Agency supervising the contractors is required).

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ON-ORBIT OPERATIONS:

The SPD will operate a CORONA Operations Command Post at the Satellite Test Center, Sunnyvale, continuously during a mission. The Payload Sub-Assembly Project Office will station appropriate Project Office personnel and contractor representatives there as well as at the LMSC-AP facility during missions. The Satellite Operations Center in the Pentagon will deal principally and directly with the CORONA Command Post and the LMSC-AP facility, as appropriate, during a mission.

The SPD is the final field authority during a mission operation from launch through recovery. The SPD is expected, in normal situations, to assign responsibility to the senior Payload Sub-Assembly Project Office representative for matters of payload sub-assembly readiness, on-orbit operation, analysis of technical difficulties, etc. The senior Payload Sub-Assembly Project Office representative, in turn, will provide Payload Sub-Assembly status reporting on an agreed-on regular basis or upon request of the SPD. However, when there are differences of opinion in the case of technical difficulties, and when in the judgment of the SPD that mission failure may be imminent, the operational decisions of the SPD shall always be overriding and final.

SECURITY:

Payload Sub-Assembly

In furtherance of the management responsibilities assigned herein, both the SPD and the Director, PSAPO are authorized to grant CORONA clearances to Government employees and contractor personnel under their jurisdiction in accordance with established [] security policies and procedures. This authority is not further delegable. The SPD and PSAPO shall keep each other and higher authority informed on a continuing basis of current project access lists.

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The SPD and PSAP shall each honor, without question, a need-to-know determination on the part of the other that a properly cleared person requires access to project information and/or data.

In order to insure consistency in the security practices of the SPO and PSAPO, a CORONA Security Guide will

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be prepared jointly by SAFSP and CIA-OSP and submitted to the DNRO for approval as soon as possible. Additional guidance will be provided on this matter in the near future.

AEROSPACE CORPORATION:

The SPD will utilize the services of Aerospace Corporation in a general systems engineering role. Aerospace Corporation employees supporting the SPO shall have free access to information and data at the Payload Sub-Assembly contractor(s), but shall exercise no technical influence or judgments over matters wholly internal to the Payload Sub-Assembly, and shall not be charged by the SPD with advising him on such matters.

The exchange of information contemplated herein will require direct contact by appropriate Aerospace employees with contractor engineering staffs at the PSAPO contractor plants and test facilities. However, all such direct contacts must be prior-coordinated with the PSAPO. Such coordination is both for the purpose of informing the PSAPO and permitting his participation or monitoring of such direct contacts. The PSAPO is expected to honor the requests of the SPD for any item of information or data, or requested direct communication with contractors. The converse applies to the SPD with regard to similar PSAPO requests for information or data, or direct contact with SPD contractors.

GENERAL GUIDANCE:

Despite good intentions on both sides, differences in interpretation of this management directive, the question of whether or not a problem has interface implications, etc., probably will occur periodically. When such an instance arises and cannot be settled in the field, I desire that the problem be called to my attention promptly for resolution.

The successful implementation of this management arrangement will require the whole-hearted cooperation of both CIA and SAFSP. I enjoin each of you to insure that your respective subordinates put forth every effort in that vein.

Signed: Alexander H. Flax

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MEMORANDUM FOR: Director, National Reconnaissance Office
SUBJECT : CORONA Program Planning

I am forwarding an evaluation of the recent problems that have been confronted with the CORONA Photographic System and the remedial measures that are being taken to insure that this important collection system is maintained in an effective state throughout its remaining lifetime.

15/
CARL E. DUCKETT
Director
CIA Reconnaissance Programs

Attachment:

[] with attachments

Distribution:

1 - DNRO	7 - PD/H
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3 - General King	9 - RB/S&T
4 - DD/S&T	10 - RB/S&T
5 - D/OSP	11 - RB/OSP
6 - D/OSP	

DD/S&T/OSP/JJCrowley:hg [] (29 July 1969)

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SPECIAL HANDLING



27 October 1967

THE CORONA IMPROVEMENT (J-3) PROGRAM
DEVELOPMENT HISTORY

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In the spring of 1965 the DDR&E Dr. Fubini suggested to Mr. Crowley, the OSP CORONA Project Manager, that a look at a CORONA Improvement Program might be desirable. Mr. Crowley directed his West Coast Resident Office to study the problem and report to him NLT 1 June. A series of meetings followed between IMSC, GE, Itek, [] and the Project Office. Failure modes and operational deficiencies of the existing J system were studied, as were the "C" system coverage requirements, weather data, reliability data, etc. From the studies a matrix of feasible system designs was developed, with all recommended designs incorporating improved pan and stellar index camera systems and an improved command system. The major variables in the matrix were launch vehicle, film load, orbital lifetime, and RV configuration. The Resident Office had concluded that a significant cost savings could be realized by adopting the Atlas-Agena launch vehicle, 30 day orbital missions, increased film load, and reduced launch rate. The DNRO, however, elected to maintain the Douglas launch team, approving a modest upgrading to accommodate the increased payload weight of the new Constant Rotator and DISIC camera systems.

A go-ahead was issued in July 1965 to Douglas, Fairchild, and Itek for the Thorad, DISIC, and CR systems respectively. As initially defined the first J-3 launch was targeted for January 1967, however, for budgetary and other reasons the DNRO delayed issuance of go-ahead to IMSC and GE until April 1966. The eight month delay resulted in a six month schedule slip, with the first launch rescheduled at the April 1966 Interface Meeting for 25 July 1967.

Schedules of critical design reviews, qual test program, hardware deliveries, and system test activities were established to meet this target date. Final design reviews for the camera, SRV, electrical system, structural aspects, and total payload were set for 23 August 1966, 7 September 1966, 7 October 1966, 17 February 1967, and 14 April 1967 respectively. All were conducted according to plan. Deliveries of the camera systems and SRV's to AP were several weeks behind the target schedule, however, these slippages were made up during systems test. The J-3 qual program proceeded smoothly throughout, with J-3 being somewhat of a "first" for reconnaissance payloads in that a full qual program was conducted, and the qual program was completed in advance of the first launch. In early July 1967 it appeared as though the target launch date might be met, however, a Corona problem was uncovered on both pan and DISIC cameras during thermal altitude testing and two HIVOS test reruns were required. CR-1 was available for launch on 7 September 1967

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approximately six weeks behind the original target date of 25 July 1967. The first J-3 launch took place on 15 September 1967.

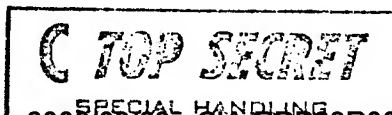
The design goals of the J-3 system were basically as follows:

Constant Rotator Panoramic Camera

- a. Removal of camera system oscillating members and reduction of error budget vibration components.
- b. Improvement of V/H match from 5% to 2%.
- c. Proper camera cycling rates at altitudes down to 80nm (minimum J-1 altitude is 100nm).
- d. Elimination of camera failures caused by film pulling out of rails. (Two such J-1 failures have been experienced in the past two years.)
- e. Capability of handling ultra thin base (UTB) film. (An increase of 50% in coverage at no increase in weight.)
- f. Exposure control through variable slit selection.
- h. Capability of handling alternate film types and split film loads (color,).
- i. Improved lens performance.
- j. Pan geometry without affect on imagery (J-1 systems require IMC traces in the format area).

DISIC

- a. Improved terrain camera performance (increased focal length 1.5" to 3").
- b. Independent mapping capability.
- c. Improved shutter reliability.
- d. Removal of stellar launch window restrictions (J-1 launch windows are governed by stellar windows).
- e. Elimination of stellar camera flare (increased knee angle and improved baffle design).



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All Systems

- a. Removal of limited shelf life items.
- b. Removal of items affecting R-1 readiness capabilities.
- c. Reduced power requirements.

At the June 1965 briefing to Dr. McMillan the Resident Office presented one time cost figures for the CORONA Improvement Program as indicated in Column I. Actual cost figures for the development program are shown in Column II.

Est. June 1965Actual

IMSC
Itek
GE

Total

--

As can be seen, the major variance is in the pan camera development. The increased costs at Itek were primarily associated with enlarged scope of the UTB, PG, and exposure/filter control developments; and with the addition subsequent to the briefing of a lens improvement program. Actual one time design and qualification costs at IMSC were extremely low since the [] includes one time developments costs of [] for a data subsystem which includes a recoverable digital tape recorder and its associated ground automatic data processor. The tape recorder data has proved extremely beneficial both in flight and ground test.

One time costs at GE include [] for two sets of new SRV-AGE. Costs of these AGE were less than one-quarter the cost of similar AGE procured by another NRP program in the same time period. Part of the cost savings were associated with the use of mini-block terminals with pin inserts, which eliminated the need for costly terminal board panels. A DOD cost improvement award was given to GE personnel for their design work on the J-3 AGE.

DISIC integration costs are included in the IMSC and GE figures, however, DISIC one time development costs and Thorad development costs have not been shown since these contracts were administered by []. The increase in cost of a J-3 payload over a J-1 payload is approximately [].

From a technical standpoint the J-3 development has been an outstanding success. All design goals have been achieved, and the first flight has demonstrated the adequacy of the qual program and the reliability and compatibility

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of the hardware. The problems experienced on the CR-1 flight were of a minor nature, and can be corrected for CR-2 without major rework. The two sigma pan camera performance predictions as presented to the DNRO at the 15 June 1965 CORONA Improvement Program briefing were as follows:

	100 NM		90 NM		80 NM	
	0°	30°	0°	30°	0°	30°
Along Track	7.6	8.7	7.0	7.9	6.4	7.2
Across Track	7.7	14.9	7.1	14.0	6.5	13.2

The better Corn target performance data from the forward camera on Mission 1101 yielded approximately 6 feet along track and 10 feet across track from an altitude of approximately 89nm. The loss of scan resolution has been attributed to a dynamic lift problem aggravated by lower than normal temperatures on orbit. The performance nonetheless was judged to be the best ever from a CORONA system, and substantiates the validity of the design concept. Since the improved lens does not become available until CR-4 and since the altitude of Mission 1101 was higher than desired, the ultimate performance of the J-3 system is yet to be demonstrated.

In conjunction with the J-3 development program, a forward looking program of photographic investigation has been carried out to determine the most promising techniques of intelligence enhancement. The program, designated EKIT because of the cooperation between Eastman Kodak and Itek, has provided the foundation for Systems Testing on CR-1 through CR-4. The CR-1 through CR-4 tests will in turn provide the basis for a deeper investigation into the potentials of multiband work in intelligence reconnaissance work in the future.

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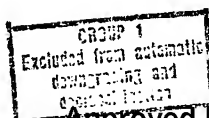
29 JUL 1969

MEMORANDUM FOR THE RECORD

SUBJECT: CORONA Program Planning

1. For some time now I have been concerned about the phase-out aspects of the CORONA Program, in particular, the problems of personnel, quality assurance, and availability of critical spares which are inherent in a phase-out operation, and the minimum overlap and zero defects philosophy being followed for [redacted] CORONA in the 1971 time period. My concerns were reinforced last week by the failure of the Mission 1107 forward looking camera on the first "operate" after injection into orbit. Upon learning of the failure, I immediately contacted General King, [redacted] of Lockheed and [redacted] of Itek and asked their assistance in setting up a thorough review of the CORONA Program. I notified my CORONA Program Manager of my urgent desire for this review and a conference was held on Friday, 25 July 1969, at the CORONA A/P Facility in Palo Alto. Minutes of the meeting are attached.

2. Following the meeting, I held consultations with my staff on the problem areas outlined by the contractors. Detailed discussions were held on the actions necessary to insure that proper attention is directed toward maintaining the continued success of the CORONA Program. I had previously prepared plans for an integration of my [redacted] CORONA staffs in order to make most efficient use of the experienced personnel available. As a first step, I have directed that this reorganization plan, which establishes one Photographic Systems Division, be implemented as of 1 August 1969. Under this reorganization, [redacted] will become Program Director for [redacted] [redacted] CORONA [redacted] and thus responsible in

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SUBJECT: CORONA Program Planning

me for assuring proper interprogram planning so that a continuity of search and surveillance coverage is insured. I plan to have [] meet with General King in the near future to investigate further, potential CORONA Program alternatives discussed by General King and myself which could be implemented at minimum cost to assure availability of coverage in the critical 1971-72 phase-over period.

3. As part of this reorganization, I will transfer immediately to the West Coast CORONA Program three experienced technical personnel from within the Photographic Systems Division.

[] U. S. Navy (Retired), will assume duty as Manager of the Integrated West Coast Photo Systems Office.

[] was Director of the CORONA Program from 1965 through 1968. [] will become Chief of the West Coast Technical Staff. [] was Technical Director of the CORONA Program from 1965 through 1967. (During the period 1965-1967, the CORONA J-3 System was designed and developed.) []

will serve on [] Technical Staff. [] is an electrical engineer with considerable field test experience on the OXCART and other Agency Programs. In addition, [] who has had extensive experience in CORONA operations since 1964 and as Program Director in 1968-1969, will assume additional operations responsibilities [] An organization chart for the CIA Photo Systems Division is attached.

4. With regard to the discussion of the Mission 1107 failure, it is too early to identify a positive cause. Since the failure occurred immediately after injection, the effect of the ascent environment, the most hazardous phase of the mission, is somewhat suspect. Analysis is continuing, data has been ordered from the remote tracking stations, and a full report will be made available as soon as possible.

5. As a result of the review, I found no evidence of a quality assurance problem to date in the CORONA Program. I asked General King for a quality assurance expert from his office to work with my staff in reviewing the Q.A. procedures to see if any

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SUBJECT: CORONA Program Planning

Improvements are possible. Quality Assurance on CORONA is extremely critical. Because of the booster weight limitations

[REDACTED]

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6. I find that a very real problem exists in the area of maintaining qualified personnel on the CORONA Program in the phase-out period. This is particularly true in the case of the technicians at A/P [REDACTED]

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[REDACTED]

[REDACTED] In the intervening years, the [REDACTED] has been closed, and the only remaining [REDACTED] area are those working on the CORONA Program. Because of Union regulations, it is impossible to place Lockheed technicians in [REDACTED] technicians are rightly concerned about their future, and many of the better ones have already left to seek employment elsewhere. In an environment where there is no job security for the future, it is difficult to hire new men. The problem is made worse by the time requirements associated with obtaining the security clearance required on a classified program. I consider that the preferred solution to this problem would be a physical transfer of the CORONA operation to Sunnyvale and the supply of Lockheed technicians for the tasks now accomplished [REDACTED] I have discussed with [REDACTED] who is investigating the cost and the optimum time phasing for such a move. The experienced and cleared [REDACTED] personnel will be offered employment at Lockheed [REDACTED] West Coast Field Office), thus rewarding them for their service, giving them a future job security, and keeping their talent available.

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SUBJECT: CORONA Program Planning

7. A problem also exists in the area of shelf life on CORONA hardware as a result of the reduced launch rate and program stretchout. I have requested a complete review of all Limited Calendar Life and/or Limited Operating Life (LCL/LOL) components in the system, and a plan for system refurbishment which includes cost and reliability considerations. I feel it may be necessary that we conduct a planned refurbishment of several systems. Procurement of spares is a critical item in the program and must be dealt with immediately. I will forward recommendations regarding spares upon completion of our review.

8. In summary, I am deeply concerned about insuring a continued high level of success in the CORONA Program. I have taken action to marshal my personnel resources in a way to make available additional technical talent to the Program in the months ahead. I have initiated a review of Quality Assurance procedures and methods of retaining the quality of personnel necessary to the Program. I am also investigating the shelf life problems created by the Program stretchout. I will forward to you in the several months a plan for procurement of critical spares and possibly for movement of the checkout facility. In the preparation of these plans, I will coordinate closely with General King to see that the overall systems problems and not simply the payload problems are considered.

JOHN J. CROWLEY
Director of Special Projects

cc: General King

Attachments:

- a. Photo Systems Organization.
- b. Minutes of 25 July 1969 CORONA Meeting.

Distribution:

Cy 1 - DNRO

7 - PD/H

2 - DDNRO

8 - [redacted]

3 - General King

4 - DD/S

5 & 6 - D/QS

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